

TITLE OF THE ABSTRACT: Hepatitis B and Hepatitis C profile in pre and post renal transplant patients from 2002 to 2009: a single centre study from Christian Medical College, Vellore.

DEPARTMENT: Nephrology

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DEGREE AND SUBJECT: DM (Nephrology)

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Objectives: To identify the Hepatitis B & C incidence and prevalence in hemodialysis

and renal transplant patients, risk factors involved and the relevance of viral serology, PCR and liver enzymes in predicting the infection and outcome.

Methods: All patients who underwent hemodialysis and renal transplantation from June 2002 to December 2009 were enrolled in the study. All patients underwent viral serology tests which included Hepatitis B surface antigen, Anti hepatitis C antibody and Anti-hepatitis B core antibody. Selected patients underwent Hepatitis B and C PCR testing. Duration of hemodialysis and blood transfusions are well known risk factors, and were therefore analyzed in the study. Post transplantation the prevalence was reassessed. The time required for seroconversion post transplantation, other concomitant infections and outcomes on patient and graft survival were studied.

Results: The prevalence of hepatitis B and C increased from 5% and 4.2% in the pretransplantation period to 9% and 7.1% respectively in the posttransplantation period. Blood transfusion (external) and duration of dialysis was found to be a significant risk factor for HCV seroconversion pre and post renal transplantation ($p < 0.001$). Patients who are anti HBc positive during the pre transplantation period have a high probability of becoming HBsAg/ PCR positive post transplantation. Statistically significant elevation of liver enzymes was seen during HCV seroconversion. Graft and patient survival were not affected.

HEPATITIS B AND HEPATITIS C PROFILE IN PRE AND POST RENAL TRANSPLANT PATIENTS: A SINGLE CENTRE STUDY

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
OF DM (NEPHROLOGY) EXAMINATION OF THE
TAMILNADU DR. MGR MEDICAL UNIVERSITY, CHENNAI.**

BONAFIDE CERTIFICATE

This is to certify that the work presented in this dissertation titled “**HEPATITIS B AND C PROFILE IN PRE AND POST RENAL TRANSPLANT PATIENTS: A SINGLE CENTRE STUDY**” done towards fulfillment of the requirements of the Tamil Nadu Dr. M.G.R. Medical University, Chennai for the D.M. (Nephrology) exams to be conducted in July/August 2010, is a bonafide work of the candidate Dr. Rajesh Joseph, Post graduate student in the Department of Nephrology, Christian Medical College, Vellore under my guidance and supervision. This dissertation has not been submitted, fully or in part to any other board or University.

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TITLE OF THE STUDY

Hepatitis B and Hepatitis C profile in pre and post renal transplant patients from 2002 to 2009: a single centre study from Christian Medical College, Vellore.

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ABSTRACT

Background: Hepatitis B (HBV) and hepatitis C (HCV) viral infections are important causes of morbidity and mortality in hemodialysis and renal transplantation patients and pose problems in the management of these patients. Blood transfusion and duration of hemodialysis are independent risk factors for infectivity. In the Indian subcontinent the prevalence of these infections are high. Therefore to know the current prevalence, risk factors and to improve on preventive measures the current study was undertaken. Treatment for these patients is not satisfactory.

Objectives: To identify the Hepatitis B & C incidence and prevalence in hemodialysis and renal transplantation patients, risk factors involved and the relevance of viral serology, PCR and liver enzymes in predicting the infection and outcome.

Methods: All patients who underwent hemodialysis and renal transplantation from June 2002 to December 2009 were enrolled in the study. All patients underwent viral serology tests which included Hepatitis B surface antigen, Anti hepatitis C antibody and Anti-hepatitis B core antibody. Selected patients underwent Hepatitis B and C PCR testing. Duration of hemodialysis and blood transfusions are well known risk factors, and were therefore analyzed in the study. Post transplantation the prevalence was reassessed. The time required for seroconversion post transplantation, other concomitant infections and outcomes on patient and graft survival were studied.

Results: The prevalence of hepatitis B and C increased from 5% and 4.2% in the pre transplantation period to 9% and 7.1% respectively in the post transplantation period. Blood transfusion (external) and duration of dialysis was found to be a significant risk factor for HCV

seroconversion pre and post renal transplantation ($p < 0.001$). Patients who are anti HBc positive during the pre transplantation period has a high probability of becoming HBsAg/ PCR positive post transplantation. Statistically significant elevation of liver enzymes was seen only during HCV seroconversion. Graft function and patient survival were not affected.

INTRODUCTION

Hepatitis B (HBV) and hepatitis C (HCV) viral infections are important causes of morbidity and mortality in haemodialysis ¹ and renal transplant patients ² and pose problems in the management of these patients. Chronic renal failure patients do not clear these viral infections efficiently. HBV infection is less prevalent than HCV in haemodialysis units. ³ Introduction of HBV vaccination, isolation of HBV positive patients, use of dedicated dialysis machines and regular surveillance for HBV infection dramatically reduced the spread of HBV in this setting. ⁴ The prevalence of HCV infection among haemodialysis is high and varies between countries (2% to 60%) and between dialysis units within a single country. ⁵ Studies reporting prevalence of HCV and HBV coinfection in haemodialysis are rare. Kara *et al* reported dual infection in three patients out of 67 haemodialysis patients. ⁶ In an Indian study Reddy GA et al, found 3.7% prevalence of dual infection in haemodialysis patients, which was higher than among the non-haemodialysis chronic kidney disease patients (0.09%). ⁷ Post transplant the prevalence of hepatitis B and C increases which can be explained with the reactivation of the virus after initiation of immunosuppressive agents and also due to the blood transfusion and the anti HBc positivity pre transplant. The results of treatment are not satisfactory and therefore prevention remains the mainstay.

AIM AND OBJECTIVE:

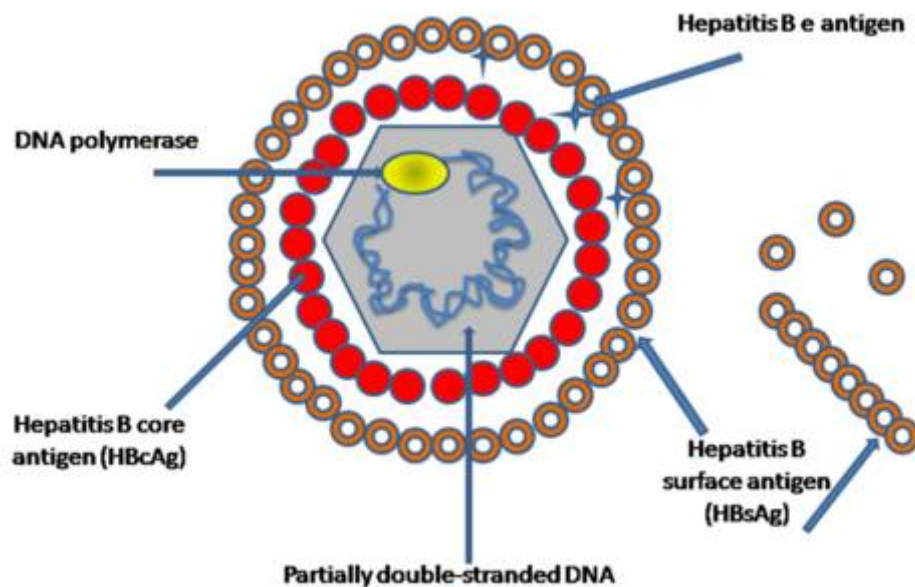
To identify

1. Hepatitis B and hepatitis C prevalence in pre and post renal transplant patients,
2. Risk factors involved in the seroconversion
3. Relevance of
 - a. viral serology,
 - b. PCR,
 - c. liver enzymes in predicting the infection and patient and graft outcome.

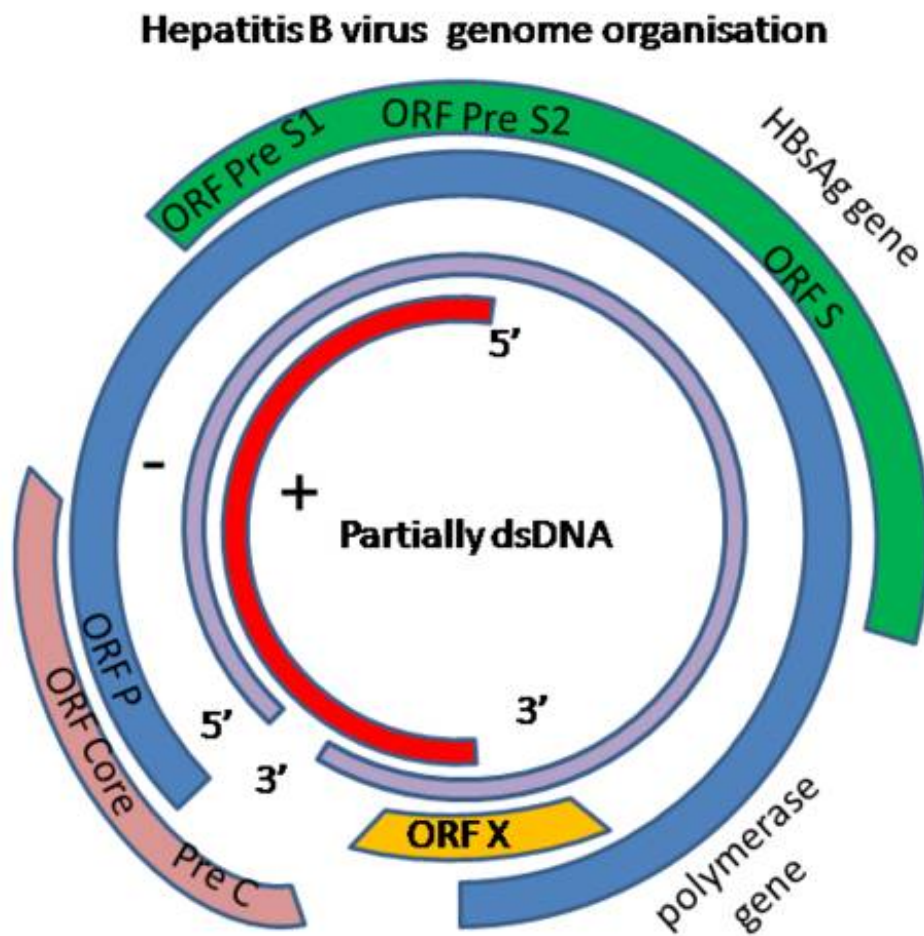
REVIEW OF LITERATURE

Hepatitis B (HBV) and hepatitis C (HCV) viral infections are important causes of morbidity and mortality in haemodialysis and post renal transplantation patients. First of all knowledge of the structure, mechanism of infectivity and transmission of these viruses is essential.

Hepatitis B: Structure (Fig: 1)



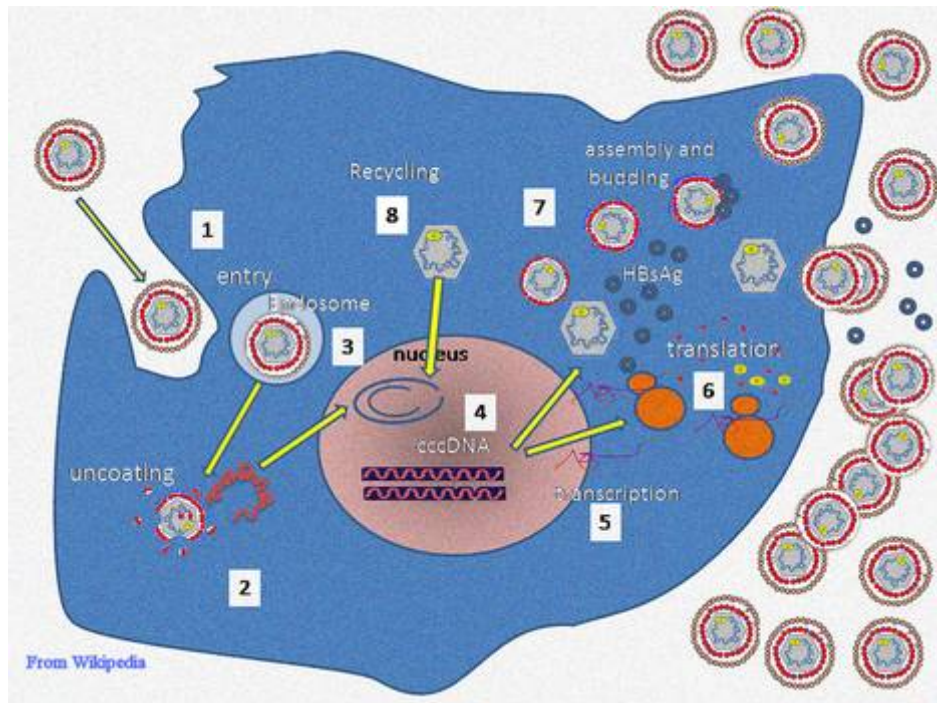
Hepatitis B virus (HBV) is a member of the Hepadnavirus family. The virus particle, (virion) consists of an outer lipid envelope and an icosahedral nucleocapsid core composed of protein. The nucleocapsid encloses the viral DNA and a DNA polymerase that has reverse transcriptase activity. The outer envelope contains embedded proteins which are involved in viral binding of, and entry into, susceptible cells. The virus is one of the smallest enveloped animal viruses with a virion diameter of 42 nm, but pleomorphic forms exist, including filamentous and spherical bodies lacking a core. These particles are not infectious and are composed of the lipid and protein that forms part of the surface of the virion, which is called the surface antigen (HBsAg), and is produced in excess during the life cycle of the virus.⁸



Genome (Fig: 2)

The genome of HBV is made of circular DNA, but it is unusual because the DNA is not fully double-stranded. One end of the full length strand is linked to the viral DNA polymerase. The genome is 3020–3320 nucleotides long (for the full-length strand) and 1700–2800 nucleotides long (for the short length-strand) ⁹ the negative-sense, (non-coding), is complementary to the viral mRNA. The viral DNA is found in the nucleus soon after infection of the cell. The partially double-stranded DNA is rendered fully double-stranded by completion of the positive sense strand and removal of a protein molecule from the negative sense strand and a short sequence of RNA from the positive sense strand. Non-coding bases are removed from the ends of the negative sense strand and the ends are rejoined. There are four known genes encoded by the genome, called C, X, P, and S. The core protein is coded for by gene C (HBcAg), and its start codon is preceded by an upstream in-frame AUG start codon from which the pre-core protein is produced. HBeAg is produced by proteolytic processing of the pre-core protein. The DNA polymerase is encoded by gene P. Gene S is the gene that codes for the surface antigen (HBsAg). The HBsAg gene is one long open reading frame but contains three in frame "start" (ATG) codons that divide the gene into three sections, pre-S1, pre-S2 and S. Because of the multiple start codons, polypeptides of three different sizes called large, middle, and small (pre-S1 + pre-S2 + S, pre-S2 + S, or S) are produced.¹⁰

Hepatitis B Replication (Fig; 3)



The life cycle of hepatitis B virus is complex. Hepatitis B is one of a few known non-retroviral viruses which use reverse transcription as a part of its replication process. The virus gains entry into the cell by binding to an unknown receptor on the surface of the cell and enters it by endocytosis. Because the virus multiplies via RNA made by a host enzyme, the viral genomic DNA has to be transferred to the cell nucleus by host proteins called chaperones. The partially double stranded viral DNA is then made fully double stranded and transformed into covalently closed circular DNA (cccDNA) that serves as a template for transcription of four viral mRNAs.

The largest mRNA, (which is longer than the viral genome), is used to make the new copies of the genome and to make the capsid core protein and the viral DNA polymerase. These four viral transcripts undergo additional processing and go on to form progeny virions which are released from the cell or returned to the nucleus and re-cycled to produce more copies ¹¹ The long mRNA is then transported back to the cytoplasm where the virion P protein synthesizes DNA via its reverse transcriptase activity.

Serotypes and genotypes

The virus is divided into four major serotypes (adr, adw, ayr, ayw) based on antigenic epitopes presented on its envelope proteins, and into eight genotypes (A-H) according to overall nucleotide sequence variation of the genome. The genotypes have a distinct geographical distribution and are used in tracing the evolution and transmission of the virus. Differences between genotypes affect the disease severity, course and likelihood of complications, and response to treatment and possibly vaccination.¹² Genotypes differ by at least 8% of their sequence and were first reported in 1988 when six were initially described (A-F). Two further types have since been described (G and H). Genotype G has an insertion of 36 nucleotides in the core gene and is found in France and the United States.¹³ Genotype H is found in Nicaragua, Mexico and California and has probably split off from genotype F. Within the genotypes subgenotypes have been described and these differ by 4-8% of their sequence.

Genotype A is most commonly found in the Americas, Africa, India and Western Europe.

Genotype B is most commonly found in Asia and the United States. Genotype B1 dominates in Japan, B2 in China and Vietnam while B3 confined to Indonesia. B4 is confined to Vietnam. All these strains specify the serotype ayw1. B5 is most common in the Philippines.

Genotype C is most common in Asia and the United States. Subgenotype C1 is common in Japan, Korea and China. C2 is common in China, South-East Asia and Bangladesh and C3 in Oceania. All these strains specify the serotype adrq-. C4 specifying ayw3 is encountered in Aborigines from Australia.

Genotype D is most commonly found in Southern Europe, India and the United States and has been divided into 8 subtypes (D1-D8). In Turkey genotype D is also the most common type. A pattern of defined geographical distribution is less evident with D1-D4 where these subgenotypes are widely spread within Europe, Africa and Asia. This may be due to their divergence having occurred before than of genotypes B and C. D4 appears to be the oldest split and is still the dominating subgenotype of D in Oceania.

Type E is most commonly found in West and Southern Africa.

Type F is most commonly found in Central and South America and has been divided into two subgroups (F1 and F2).

Type G is most commonly found in Europe and the United States and belongs to the serogroup adw2.

Type H is most commonly found in Central and South America and California in United States.

Africa has five genotypes (A-E). Of these the predominant genotypes are A in Kenya, B and D in Egypt, D in Tunisia, A-D in South Africa and E in Nigeria.

Transmission

Transmission of hepatitis B virus results from exposure to infectious blood or body fluids containing blood. Possible forms of transmission include (but are not limited to) unprotected sexual contact, blood transfusions, re-use of contaminated needles & syringes and vertical transmission from mother to child during childbirth. Without intervention, a mother who is positive for HBsAg confers a 20% risk of passing the infection to her offspring at the time of birth. This risk is as high as 90% if the mother is also positive for HBeAg. HBV can be transmitted between family members within households, possibly by contact of nonintact skin or mucous membrane with secretions or saliva containing HBV. However, at least 30% of reported hepatitis B among adults cannot be associated with an identifiable risk factor. In endemic areas, most adult dialysis patients with HBV infection are chronic carriers who acquired HBV infection during early childhood. Independent risk factors for HBV infection among dialysis patients in nonendemic areas include: ¹⁴

1. Presence of HBsAg positive patients within the same dialysis unit
2. Nonsegregation of hemodialysis machines with dedicated machines for HBsAg positive patients

3. A lower than 50 percent prevalence rate of hepatitis B vaccination among dialysis patients in the same unit.

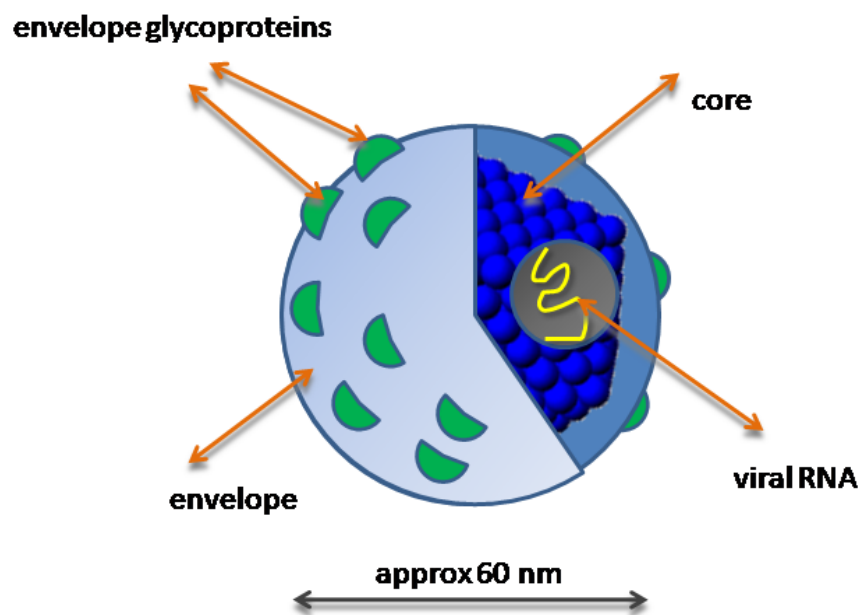
Nosocomial transmission is a well-recognized risk for HBV infection in hemodialysis patients. A serotype and genotype study in an area of intermediate endemicity in Brazil, for example, demonstrated a correlation between the distribution of HBV subtypes and specific dialysis centers.¹⁵ The preparation of injectable medications on a cart or in a location within the hemodialysis treatment area is associated with a higher incidence rate for HBV infection compared to centers that prepared these medications in a dedicated medication room.¹⁶

Transmission of HBV infection by kidney transplantation:

Role of donor/transplant recipient status – risk of transmission can be predicted from the serologic status of both donor and recipient. Kidneys from HBsAg positive donors are at a high risk of transmission of HBV infection to the recipients if the recipients are susceptible to HBV (i.e HBsAg-negative/HBsAb-negative). Transmission of HBV is even more likely to occur with the use of organs from HBsAg positive donors who are concurrently positive for HBeAg which is a marker for highly infectious state.

Technique for handling and preservation of harvested organs – may modify the risk of HBV transmission by kidney transplantation. Because the vector of transmission seems to be the residual blood retained in the harvested kidney, rather than the kidney tissue itself, the technique of continuous pulsatile perfusion in contrast to preservation on ice could potentially prevent HBV transmission by clearing some of the virus and thus reducing the infectious load below a certain level which is probably needed to ensure viral transmission.

Hepatitis C (Fig: 4)

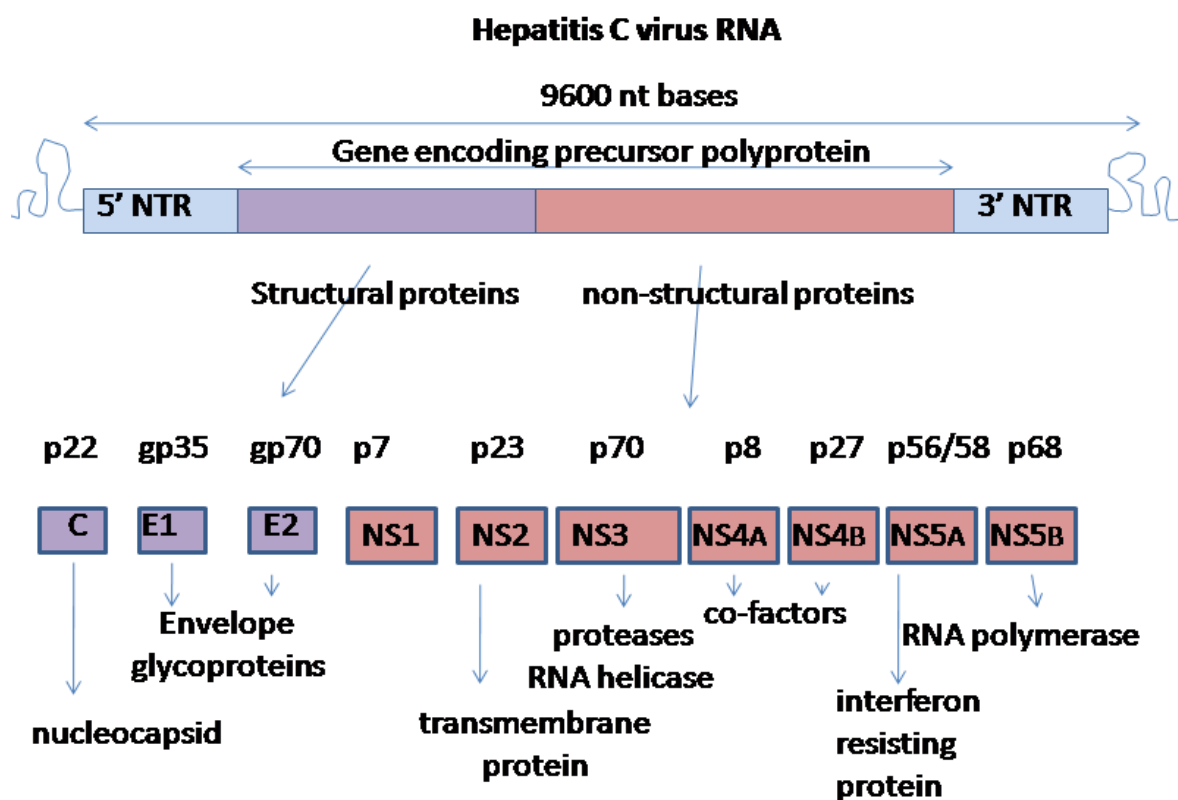


Structure of Hepatitis C Virus

Structure:

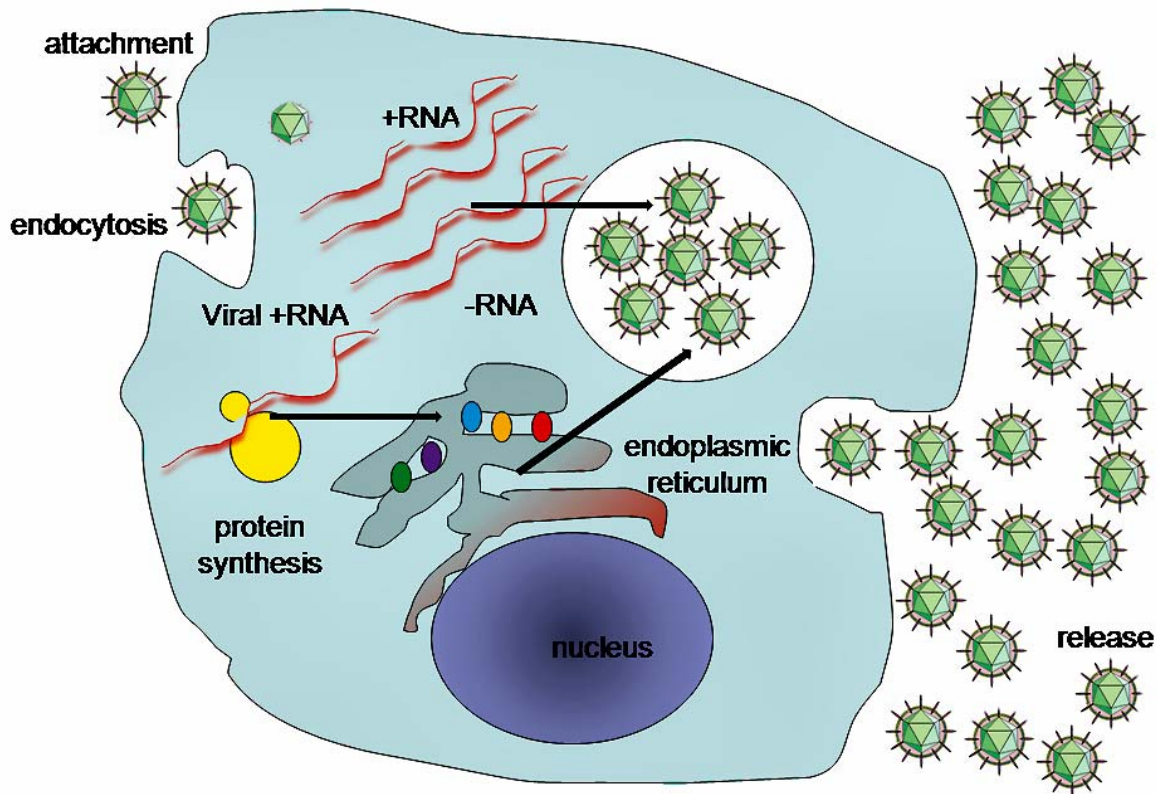
The hepatitis C virus particle consists of a core of genetic material (RNA), surrounded by an icosahedral protective shell of protein, and further encased in a lipid (fatty) envelope of cellular origin. Two viral envelope glycoproteins, E1 and E2, are embedded in the lipid envelope .¹⁷

Genome (Fig: 5)



Hepatitis C virus has a positive sense RNA genome that consists of a single open reading frame of 9600 nucleoside bases.¹⁸ At the 5' and 3' ends of the RNA are the UTR regions, that are not translated into proteins but are important to translation and replication of the viral RNA. The 5'

UTR has a ribosome binding site.¹⁹ IRES - Internal ribosome entry site that starts the translation of a 3000 amino acid containing protein that is later cut by cellular and viral proteases into 10 active structural and non-structural smaller proteins.²⁰



Replication (Fig: 6)

Replication of HCV involves several steps. The viruses need a certain environment to be able to replicate, and must therefore first move to such areas. HCV has a high rate of replication with approximately one trillion particles produced each day in an infected individual. Due to lack of proofreading by the HCV RNA polymerase, HCV also has an exceptionally high mutation rate, a factor that may help it elude the host's immune response. HCV mainly replicates within

hepatocytes in the liver, although there is controversial evidence for replication in lymphocytes or monocytes. By mechanisms of host tropism, the viruses reach these proper locations. Circulating HCV particles bind to receptors on the surfaces of hepatocytes and subsequently enter the cells. Two putative HCV receptors are CD81 and human scavenger receptor class B1 (SR-BI). However, these receptors are found throughout the body. The identification of hepatocyte-specific cofactors that determine observed HCV liver tropism are currently under investigation.

Once inside the hepatocyte, HCV initiates the lytic cycle. It utilizes the intracellular machinery necessary to accomplish its own replication.²¹ The HCV genome is translated to produce a single protein of around 3011 amino acids. The polyprotein is then proteolytically processed by viral and cellular proteases to produce three structural (virion-associated) and seven nonstructural (NS) proteins. Alternatively, a frameshift may occur in the Core region to produce an Alternate Reading Frame Protein (ARFP). HCV encodes two proteases, the NS2 cysteine autoprotease and the NS3-4A serine protease. The NS proteins then recruit the viral genome into an RNA replication complex, which is associated with rearranged cytoplasmic membranes. RNA replication takes place via the viral RNA-dependent RNA polymerase NS5B, which produces a negative-strand RNA intermediate. The negative strand RNA then serves as a template for the production of new positive-strand viral genomes. Nascent genomes can then be translated, further replicated, or packaged within new virus particles. New virus particles are thought to bud into the secretory pathway and are released at the cell surface.

Genotypes

Based on genetic differences between HCV isolates, the hepatitis C virus species is classified into six genotypes (1-6) with several subtypes within each genotype (represented by letters). Subtypes are further broken down into quasispecies based on their genetic diversity. The preponderance and distribution of HCV genotypes varies globally. For example, in North America, genotype 1a predominates followed by 1b, 2a, 2b, and 3a. In Europe, genotype 1b is predominant followed by 2a, 2b, 2c, and 3a. Genotypes 4 and 5 are found almost exclusively in Africa. There are no studies detecting the predominant genotype of HCV in India. Genotype is clinically important in determining potential response to interferon-based therapy and the required duration of such therapy. Genotypes 1 and 4 are less responsive to interferon-based treatment than are the other genotypes (2, 3, 5 and 6).²² Duration of standard interferon-based therapy for genotypes 1 and 4 is 48 weeks, whereas treatment for genotypes 2 and 3 is completed in 24 weeks.

Infection with one genotype does not confer immunity against others, and concurrent infection with two strains is possible. In most of these cases, one of the strains removes the other from the host in a short time. This finding opens the door to replace strains non-responsive to medication with others easier to treat.

Transmission: The various modes of transmission of HCV are through intravenous drug use, blood transfusion, sexual promiscuity, religious scarification, having been struck or cut with a bloody object, pierced ears or body parts or immunoglobulin injection. Nosocomial transmission in hemodialysis unit — several of the following factors may affect the risk of transmission of HCV to patients and staff in hemodialysis units:

Transmission of infection by needle-stick injury — ranges from 2.7 to 10 percent.²³ Despite this risk, the prevalence of anti-HCV among dialysis staff is comparable to that in voluntary blood donors.

Breakdown in standard infection control practices — several outbreaks of HCV infection in HD units have been associated with a failure to rigidly enforce universal precautions and standard infection-control measures. HCV RNA has also been detected on the hands of some dialysis personnel despite apparent adherence to standard precautions. This observation raises the possibility that dialysis staff could be potential vector for HCV transmission between HD patients.

Physical proximity to an infected patient — In a multicenter study in Belgium, 38 percent of the HD patients who seroconverted had never been transfused and had no apparent risk factor for HCV infection.²⁴ Clustering of seroconversion occurred only in dialysis units in which anti-HCV positive patients were being treated. In addition, a higher risk of seroconversion was found in patients dialyzed at a station adjacent to that of an anti-HCV positive patient as compared to other patients in the same unit. A Portuguese Society of Nephrology survey found the lowest incidence of HCV infection in HD units that used isolated rooms to treat anti-HCV positive patients.²⁵

Dialysis machines — several reports have linked a high incidence of HCV infection in dialysis patients who shared dialysis machines in the HD unit. In addition, the use of dedicated machines and isolated areas for anti-HCV positive patients along with strict enforcement of universal precautions was associated with a decrease in the incidence of seroconversion.²⁶ However, the need for isolation and use of dedicated machines for anti-HCV positive patients has been challenged. In a multicenter study from Belgium, for example, no new cases of HCV

transmission occurred over a 54-month study period, despite the observation that none of the participating HD centres used dedicated machines for anti-HCV positive patients, and over 70 percent of the patients were dialyzed in units whose monitors were not disinfected after each session.²⁷ While transmission of HCV by dialysis machines may be possible, systematic monitor disinfection is an effective tool in preventing nosocomial transmission of HCV.²⁸ Furthermore, in an experimental study, autoclaving of dialysate circuits was shown to eliminate HCV particles from artificially contaminated hemodialysis monitors.²⁹ Therefore, systematic monitor disinfection appears to be a simple, but valuable means of controlling HCV transmission in the hemodialysis unit and, in the opinion of some, its use should be mandatory. If implemented in conjunction with strict adherence to universal precautions, this makes the use of dedicated machines for anti-HCV positive patients unnecessary.

Overall, data suggest that HD machines do not have a significant role in the nosocomial transmission of HCV infection. Therefore, it is likely that HCV transmission in hemodialysis settings principally results from environmental contamination and horizontal, patient-to-patient, transmission.

Dialyzer membranes, hemodialysis ultrafiltrate, and peritoneal fluid — theoretically, the passage of HCV through intact dialyzer membranes seems improbable as the viral particles have an estimated diameter of 35 nm, much higher than the pores of even the most permeable dialysis membrane. Nevertheless, the passage of the virus into the dialysate compartment could result from any alteration in pore size or disruption of the membrane integrity associated with the process of filter assembly, the dialysis session itself, or with dialyzer reuse. Two studies have reported that neither low-flux (cellulose) nor high-flux (cellulose-diacetate, polysulfone and polyacrylonitrile) dialyzers permit contamination of the dialysis ultrafiltrate with HCV RNA³⁰.

³¹. In similar reports, other investigators, using a continuous syringe extraction method (which is very precise for monitoring hemodialysis ultrafiltrate), have detected no HCV extravasation to spent dialysate with the use of fresh polysulfone dialyzers and transmembrane pressure of less than 18.72 mmHg, despite the finding that serum HCV RNA levels decreased significantly postdialysis as compared to predialysis ³² These data suggest that lower transmembrane pressure should be used in anti-HCV-positive patients to minimize the risk for HCV transmission ³²

In contrast, others have detected HCV RNA by PCR in the dialysate of apparently intact polyacrylonitrile membranes, but not cellulose membranes. ³³ It is important to emphasize that detection of HCV RNA in the dialysate by PCR may only imply the presence of fragments of viral RNA, not the infective virus itself, a situation which may not lead to transmission of the infection. To date, a higher prevalence of anti-HCV among HD patient has not been associated with any particular dialysis membrane.

HCV has been found in several organic fluids including ascites; thus, the peritoneal fluid of HCV-infected PD patients may represent a potential infectious risk. Since most studies suggest that HCV RNA is present in the CAPD effluent of some patients, the effluent should be considered infectious material. ³⁴

Reprocessing of dialyzers — In a prospective study in 15 HD units in Belgium, the incidence of HCV infection in patients treated in units that reprocessed dialyzers was comparable to those that did not. ³⁵ Similar findings were noted by a Portuguese Society of Nephrology survey ³⁶. However, among units that did reprocess dialyzers, the lowest incidence was observed in patients in units that used separate rooms to reprocess dialyzers from anti-HCV positive and anti-HCV negative patients or had a ban on reprocessing dialyzers from anti-HCV positive patients.

In another study, a decline in the prevalence of HCV seropositivity among HD patients occurred in the presence of routine reuse of dialyzers.³⁷ This observation suggests that dialyzer reprocessing could not have any significant contribution to the nosocomial transmission of HCV.³⁷

RISK FACTORS FOR HCV INFECTION IN DIALYSIS PATIENTS — A number of risk factors have been identified for HCV infection among dialysis patients, including the number of blood transfusions, the duration of chronic kidney disease stage V, the mode of dialysis, and the prevalence of HCV infection in the dialysis unit.

Number of blood transfusions — In numerous studies, anti-HCV-positive HD patients had received significantly more units of blood products than anti-HCV negative patients.³⁸ Fortunately, since the introduction of erythropoietin and screening of blood products for anti-HCV, the risk of acquiring post-transfusion HCV infection has declined to less than one per 3000 units of blood products transfused.³⁹

Duration of ESRD — The interval since beginning of dialysis has been reported to be significantly longer among anti-HCV-positive patients compared to anti-HCV negative patients, and the likelihood of HCV infection increases considerably after a decade of HD.

Mode of dialysis — Patients on peritoneal dialysis (PD) are at lower risk for HCV infection and, in contrast to hemodialyzed patients, the duration of dialysis does not appear to be a risk factor for acquiring HCV infection. The rate of seroconversion was 0.15 per patient-year on hemodialysis compared to 0.03 per patient-year on CAPD.⁴⁰ In addition, the majority of anti-HCV positive CAPD patients may have acquired HCV infection while on hemodialysis. One or more of the following factors can account for the lower risk of HCV infection among PD

patients: PD patients have a lower requirement for blood transfusion than hemodialysis patients, the absence of access site and extracorporeal blood circuit reduces the risk for parenteral exposure to the virus, PD offers a more isolated environment since it is primarily a home procedure. The observation that the prevalence of anti-HCV is lower in patients receiving home hemodialysis than in those receiving in-centre hemodialysis is consistent with the importance of an isolated environment. The overwhelming majority of the infections in renal transplant recipients are acquired prior to transplantation. Only a small portion develops due to HCV transmission by an infected graft or denovo infection in the post transplantation period. There is a wide variation in the rate of HCV transmission by anti HCV positive donors among transplant centers which could be due to the following factors: a) clinical and lab evidence of liver disease and testing for anti-HCV among organ transplant recipients may significantly underestimate the prevalence and transmission of HCV infection, b) prevalence of HCV RNA among these donors, c) higher transmission in centre using flush preservation compared to those using pulsatile perfusion.

Epidemiology of hepatitis B and C

The incidence of HBV infection in dialysis patients has significantly decreased over the past few decades. This is due to the following factors: Screening of blood products for HBsAg and anti-HBc, implementation of infection control measures, reduced need for blood transfusion after the advent of erythropoietin, hepatitis B vaccination. A national surveillance in the United States in 2002 involving 263,820 patients from 4,035 dialysis centres revealed that 1 percent of dialysis

patients were seropositive for HBsAg.⁴¹ The annual incidence of HBV infection among dialysis patients, which was 0.12 percent in 2002, has remained relatively stable over the past decade.⁴¹

HBsAg positivity rates in dialysis patients correlate with endemicity in the general population, as illustrated by the prevalence rates within Asia. HBsAg prevalence rates in dialysis patients have been reported as follows: 1 percent in United States⁴¹ 5.9 percent in Italy⁴² 12 percent in Brazil⁴³, 1.3 to 14.6 percent in Asian Pacific countries.⁴⁴ The prevalence of hepatitis B in Indian dialysis population ranges from 3.4% to 42% in various studies.⁴⁵ A study conducted in our centre in 2002 showed an incidence of 5%.⁴⁶

Risk factors for hepatitis B in hemodialysis units — Independent risk factors for HBV infection among dialysis patients in nonendemic areas include the following: Presence of HBsAg positive patients within the same dialysis unit, nonsegregation of hemodialysis machines with dedicated machines for HBsAg positive patients, a lower than 50 percent prevalence rate of hepatitis B vaccination among dialysis patients in the same unit. Nosocomial transmission is a well-recognized risk for HBV infection in hemodialysis patients: A serotype and genotype study in an area of intermediate endemicity in Brazil, for example, demonstrated a correlation between the distribution of HBV subtypes and specific dialysis centers.⁴⁷ Even in HBsAg-negative dialysis patients with a history of resolved HBV infection, minute amounts of transcriptionally active HBV DNA could be detected by polymerase chain reaction in peripheral blood mononuclear cells and serum samples from about 50 percent of patients. This phenomenon was associated with deletions in the pre-S1 region of the viral genome, which affected the S promoter, thereby reducing the production of HBsAg. Crucial to preventing nosocomial transmission are the implementation of and/or adherence to: Standard or universal precautionary measures, hemodialysis unit procedures for the prevention of blood borne infections and

hepatitis B vaccination of nonimmune individuals. Outbreaks of HBV infection in dialysis units have been attributed to the omission of initial and/or periodic HBsAg screening for patients, the sharing of multidose vials or blood-contact equipments, and failure to reduce the susceptible pool of patients by vaccination. Although HBV DNA traverses the dialyzer membrane during high flux dialysis, the degree of infectivity of dialysate and ultrafiltrate remains controversial.⁴⁸ The prevalence of HBV infection (HBs-antigenemia) among kidney transplant recipients reported in various studies varies widely from 1.8% to 21.3% mostly due to differences in geographical areas, study population and transplantation policies.⁴⁹ The overwhelming majority of the infection in renal transplants are acquired prior to transplantation. Only a very small portion develops due to HBV transmission by an infected graft or denovo infection in the post transplantation period. Immunosuppression may increase HBV replication by various mechanisms, including diminished activity of cytotoxic T lymphocytes. In addition, the HBV genome contains a glucocorticoid-responsive element that augments HBV replication. Azathioprine and the calcineurin inhibitors may also enhance HBV replication.

The prevalence of anti-HCV antibody among patients on dialysis is consistently higher than in healthy populations, suggesting that dialysis patients may be at higher risk of acquiring HCV infection. The reported incidence, however, varies based in part upon the type of laboratory assay used. Using a first generation enzyme linked immunosorbent assay (ELISA-1), for example, the prevalence of anti-HCV antibodies among dialysis patients has been reported to range from 8 to 36 percent in North America, 39 percent in South America, 1 to 54 percent in Europe, 17 to 51 percent in Asia and 1.2 to 10 percent in New Zealand and Australia. The advent of second generation tests (ELISA-2) revealed an higher prevalence of anti-HCV antibodies among hemodialysis patients. Pooled data from studies in which dialysis patients were tested by

both ELISA-1 and ELISA-2 revealed that ELISA-2 identified more than twice the number of patients with HCV antibodies than ELISA-1.⁵⁰ Using second generation anti-HCV tests, the prevalence of anti-HCV antibodies among dialysis patients has been reported to be 25 to 36 percent in the United States, 2 to 63 percent in Europe and 22 to 55.5 percent in Asia⁵⁰.

Third generation anti-HCV tests are currently largely in use. Compared to second generation tests, they have shown greater sensitivity and specificity in patients receiving renal replacement therapy⁵¹ Using such tests, the prevalence of anti-HCV antibodies among dialysis patients was found to be: 5.5 to 10 percent in the United States, 13.5 to 31 percent in Italy, 42 percent in France. The Dialysis Outcomes and Practice Patterns Study (DOPPS), a prospective, observational study reported the mean HCV facility prevalence of adult hemodialysis patients randomly selected from 308 representative dialysis facilities in France, Germany, Italy, Japan, Spain, the United Kingdom, and the United States.⁵² The overall prevalence was 13.5 percent, with a wide variation among countries ranging from 2.6 to 22.9 %.

In addition to the wide range in the prevalence of HCV infection among different countries, there is also a wide variation in the prevalence of HCV infection among dialysis units and geographic regions within a single country. As examples: Among the 61,400 patients from dialysis centre participating in the National Surveillance of Dialysis Associated Diseases in the United States in 1995, the prevalence of anti-HCV by ELISA2 was 10.4 percent, with a range of 0 to 64 percent among centers with at least 40 patients.⁵³ In 2002, the prevalence of anti-HCV among the 164,632 HD patients tested was 7.8 percent and ranged from 5.5 to 9.8 percent among the ESRD networks, which represents different geographic areas of the United States⁵¹. HD patients in different parts of India exhibit high anti-HCV positivity (12.1%, 45.2%, 33.3% and 41.9%) in various studies.

The incidence and prevalence of HCV infection among patients on dialysis is steadily declining. Among member nations in the European Dialysis and Transplant Association, for example, the prevalence of anti-HCV declined from 21 percent in 1992 to 12.5 percent in 1999.⁵⁴ Among hemodialysis patients in the United States, the incidence of NANBH, which is principally due to HCV, declined from 1.7 percent in 1982 to 0.2 percent in 1997.⁵⁵ This decline was initially due to the reduction in post-transfusion HCV infection; subsequently, it has reflected the implementation of infection-control measures to prevent nosocomial transmission within dialysis units. Nonetheless, the 0.4 to 15 percent incidence of anti-HCV in HD units continues to be a cause for concern.

The prevalence of Hepatitis C among kidney transplant recipients is much higher than in general population. As ascertained by a positive anti-HCV test between 9% to 60% of the kidney transplant recipients are infected with the virus , with a wide variation among different centers and countries. A study conducted in CMC showed incidence of 7.5% in renal transplant recipients.⁴⁶

Clinical course and natural history of Hepatitis B and C:

Acute infection — The manifestation of acute HBV infection in dialysis patients is extremely variable. The majority of dialysis patients with new HBV infection are either asymptomatic or have mild clinical symptoms. Serum transaminase levels are either normal or only slightly elevated. This also relates to the lower values of the normal range in these patients. It is not uncommon that the diagnosis of HBV infection is made through regular surveillance testing. The serotype of HBV may affect the severity of clinical manifestations. Acute hepatitis B in dialysis

patients is more likely to result in chronic infection compared to non-immunosuppressed individuals. Up to 80 percent of acutely infected dialysis patients may become chronic carriers.⁵⁶

Chronic infection — The manifestations of chronic hepatitis B or HBV-induced cirrhosis in dialysis patients are identical to those without renal failure. Aminotransferase levels indicate hepatitic activity, but need to be interpreted according to the adjusted normal ranges. The level of gamma glutamyltranspeptidase may be increased, which could signify bile duct injury. Progression of liver disease manifests as hypoalbuminemia, coagulopathy, and development of complications such as hypersplenism, ascites, esophageal varices, or hepatic encephalopathy. Co-infection with the hepatitis D virus can lead to more severe liver disease, and needs to be investigated when clinically indicated. Liver pathology, such as piecemeal necrosis, portal inflammation or fibrosis, is similar to patients without renal failure, but evidence shows that the clinical course is worse in dialysis patients.⁴¹ The majority of data has not revealed significant differences in morbidity and mortality between dialysis patients who are positive or negative for HBsAg. Although histological evidence of chronic hepatitis has been observed in approximately 30 percent of dialysis patients with chronic HBV infection, less than 5 percent of these patients die from liver disease. Factors that may explain this apparent discrepancy include insufficient duration of follow-up and co-morbidities that mask the detrimental effects of HBV infection. Examples of the latter include cardiovascular or cerebrovascular complications and infection, which are major causes of death in the dialysis population. Cirrhosis has been associated with a 35 percent increase in mortality among dialysis patients; however, whether HBV infection alone has an adverse effect on patient survival remains controversial.

The clinical course of hepatitis B in kidney transplant recipients is usually insidious and asymptomatic due to the state of iatrogenic immunosuppression. If present clinical symptoms

mostly consist of vague complaints of general fatigue, malaise or anorexia. Jaundice is rarely present. Acute hepatitis is rarely recognisable and the disease tends to be discovered in the chronic phase. Laboratory tests are usually consistent with only mild elevation of serum aminotransferases levels, sometimes in associations with hyperbilirubinemia. The presence of abnormal liver function tests (LFTs) for more than six months defines the liver disease as chronic. Clinically overt liver disease is not manifested until advanced stages are not established late in the post transplantation period. Serologic testing reveals persistent HBs-antigenemia indicating persistent viral replication likely secondary to immunosuppression. It is associated with an increased prevalence and acceleration of liver disease. HBV DNA concentration directly reflects the degree of viral replication. . Serial monitoring of HBV DNA levels might be useful as a non invasive means of monitoring liver disease activity. However a marked decline in HBV DNA concentration in those with previously diagnosed with chronic active hepatitis may signify progression to cirrhosis probably reflecting loss of hepatic mass that harbours the virus.⁵⁷ The clinical presentation and biochemical data among HBsAg-positive kidney transplant recipients have shown poor correlation with liver morphology. Liver biopsy can demonstrate histology consistent with advanced disease in the absence of any LFT abnormalities and vice versa. Consequently LFT appears to be a poor predictor of liver disease activity and liver biopsy remains the only means for precise diagnosis and monitoring the degree of liver injury among HBsAg-positive kidney transplant recipients. Overall it has been estimated that the patient who is HBsAg –positive on the day of kidney transplantation has a 30 fold higher relative risk of developing post transplantation chronic hepatitis than a negative patient.⁵⁸ Studies with follow up extending beyond 3 years have been able to demonstrate an increased incidence of liver disease in general and of more severe form of liver disease in particular.⁵⁹ Occasionally it may take a

fulminant course with massive hepatic necrosis on liver histology and fatal outcome.^{60, 61} HBsAg-positive renal allograft recipients also have an increased incidence of hepatocellular carcinoma. This is probably related to the unique combination of rapid histological progression to liver cirrhosis which is the most important risk factor for hepatocellular carcinoma⁶² and increased hepatocarcinogenesis from persistent and enhanced viral replication⁶³ Although the data is inconsistent hepatocellular carcinoma has been reported with variable but mostly, relatively high frequency (1-23%) with mean time period between transplantation and manifestation of the tumour ranging from 1 to 320 months ⁶⁴. The course of liver disease in HBsAg-positive renal transplant patients can be affected by the type of the immunosuppressive regimen and the type of HBV infection-reactivation or denovo infection. The combination of prednisolone and azathioprine has been associated with a higher incidence of chronic liver disease in HBsAg -positive renal transplant patients. This is probably because of the hepatotoxic effect of azathioprine and the enhanced viral replication induced by high dose of prednisolone.⁶⁵ Antilymphocyte preparation when used with azathioprine and prednisolone has been associated with a higher frequency of progression to liver cirrhosis and high mortality from liver disease ⁶⁶ In contrast cyclosporine-based triple therapy regimen (CsA, azathioprine, prednisolone) has been associated with lower incidence of post transplantation chronic liver disease among HBsAg-positive kidney transplant recipients⁶⁶. Furthermore a regimen that contains only CsA and prednisolone has been associated with the lowest incidence (27%) of chronic liver dysfunction among HBsAg-positive renal allograft recipients⁶⁶ and might be the optimal immunosuppressive regimen for HBsAg-positive patients undergoing renal transplantation. Likewise mycophenolate mofetil might be another safe choice for immunosuppression in this population.⁶⁷ Reactivation of HBV occurs frequently in chronic HBsAg carriers in the post transplant period. However denovo

HBV infection in the post transplantation period has a more aggressive clinical course and a worse prognosis.⁶⁸ The impact of HBV infection on graft and patient survival following kidney transplantation has been debated over for the last 3 decades. Some studies have shown that HBs antigenemia in kidney transplant recipients affect adversely mostly the long term survival while there are other studies showing that it does not affect mortality regardless of duration follow up duration^{69, 70} The highest mortality rate (60%) has been observed among HBsAg-positive renal transplant recipients who acquired the disease in the early post transplantation period⁶⁸ There are studies that have demonstrated that the increased mortality among HBsAg -positive renal transplant recipients was not related to liver dysfunction but to other non liver causes such as sepsis, infection and vascular pathological events.⁷¹

Among patients with post-transfusion hepatitis C, HCV RNA is detected in the serum within one to three weeks after exposure, followed several weeks later by elevated serum alanine aminotransferase levels (ALT). Among such patients, 50 percent have self-limited disease and 50 % have persistently elevated serum ALT levels. Of those who undergo liver biopsy, 60 % have chronic active hepatitis and 10 to 20 % cirrhosis. Some of these patients also develop hepatocellular carcinoma. Little is known concerning the natural history of acute and chronic HCV infection in patients undergoing maintenance dialysis.⁷² This is due in part to an unrecognized onset of infection and the slow progression of hepatitis C viral disease; the latter may not have the time to become clinically apparent among those on maintenance dialysis because of the overall shortened life-expectancy. A prospective study of 19 dialysis patients with acute infection found that, at a median follow-up of three years, nearly 80 % remained viremic.⁷³ Overall, approximately 60 percent had increased transaminase levels and positive HCV RNA, with five patients exhibiting chronic active hepatitis on liver biopsy. Four patients (21%) cleared

the viral infection. The time required to develop liver complications from HCV can be prolonged. There is paucity of data available concerning survival among chronic dialysis patients with hepatitis C virus infection. Overall, HCV infection is a poor prognostic factor for survival among patients with end stage renal failure. This was perhaps best studied in a 2004 meta-analysis of four clinical trials of over 2000 patients in which HCV infection was associated with an increased risk of mortality of 1.57 (95% CI 1.33 to 1.86) versus uninfected dialysis patients.⁷⁴ Hepatocellular carcinoma and cirrhosis were also significantly more frequent in HCV-infected patients.

Relationship among serum ALT, HCV infection, and liver disease — In general, the greater the elevation in serum ALT, the higher the probability of histologic evidence of the liver disease in HCV infection. This correlation, however, is weak. In addition, serum ALT levels are poor predictors of liver disease. Among hemodialysis patients, for example, serum ALT levels are elevated in^{75, 76}: 4 to 67 percent patients with anti-HCV, 12 to 31 % of patients with HCV RNA, one-third of patients with biopsy-proven hepatitis. Similarly, biochemical evidence of liver disease is present in only 42 to 52 % of HCV RNA positive transplant recipients.⁷⁷ The discrepancy between serum ALT levels and the presence of anti-HCV is due to the following reasons: Chronic HCV infection characteristically has a fluctuating course with multiple peaks and troughs in ALT levels. Thus, patients with normal ALT levels may have severe histologic lesions. HCV infection is not always associated with chronic liver disease. In one report, only 69 % of anti-HCV positive symptom-free blood donors who underwent liver biopsy had histologic evidence of chronic hepatitis. As discussed earlier, some anti-HCV-positive patients may have cleared the infection and anti-HCV may be the remnant of past infection. Baseline serum ALT levels are depressed in patients on dialysis. However, elevated serum ALT has been observed in

4 to 23 % of anti-HCV off dialysis patients.⁷⁸ These patients could be carriers of HCV infection in whom anti-HCV production is absent, or the liver disease might be due to a non-A, non-B virus other than HCV, or to non-viral causes.

Liver biopsy — Because of these afore mentioned limitations, liver biopsy remains the only reliable method of confirming the presence and assessing the severity of liver disease in patients with HCV infection. Liver histology at the time of initial presentation has been shown to be a good predictor of intermediate and long term outcome in renal transplant recipients with liver disease.⁷⁹ Over a mean follow-up of six years, progression to liver failure and death was rare in transplant recipients with mild histologic abnormalities such as fat metamorphosis or chronic persistent hepatitis. In contrast, 35 percent of recipients with early chronic active hepatitis and 60 % of recipients with advanced chronic active hepatitis progressed to liver failure and death. Liver biopsy is therefore done in patients in whom serum ALT levels are persistently elevated.⁷⁹ Patients with normal ALT levels are biopsied only if they are being considered for transplantation.

The natural history of acute HCV infection in kidney transplant recipients remains incompletely understood mostly due to the paucity of uniform longitudinal observation with available histological data. Long term studies have shown decreased patient survival late in the second decade following kidney transplantation mainly due to liver related and sepsis related mortality. Cirrhosis has been shown to be the most important independent predictor of death after kidney transplantation and is believed to be implicated in both liver related and sepsis related mortality. Liver related deaths result by and large from decompensated cirrhosis late in post transplantation period. Only in 1% to 5% of the cases, is fulminant hepatitis or rapidly progressive cholestatic liver failure within the first post transplantation period, a major cause of death.⁸⁰

Clinical consequences of HCV transmission by organ transplantation: Long term studies from the New England Organ Bank have demonstrated that after a median follow up of 32 months the recipients of organs from anti-HCV-positive cadaver organs had a four fold higher relative risk of liver disease than from recipients from anti-HCV-negative donors. However the recipients from anti-HCV-positive cadaver organs did not have an increased risk of graft loss or death. On extended follow up also there was no significant between the two groups with respect to graft loss or death.⁸¹ A recent large historical cohort study analysed the 2000 United States Renal Data System (USRDS) Data to determine the impact of donor hepatitis C serology on graft and patient survival among kidney transplant recipients. This study included 20,111 adult recipients of cadaveric kidney transplants from donors with known hepatitis C serology between July 1994 to June 1998. The mean follow up was 1.85+/-1.12 years. Transplantation of kidneys from HCV-positive donors into HCV-negative recipients was independently associated with poorer patient survival.⁸² So the current data regarding the impact of donor hepatitis C seropositivity on graft and patient survival in kidney transplantation appear to be controversial and therefore, any general recommendation for the use of kidneys from HCV infected donors should be guarded.

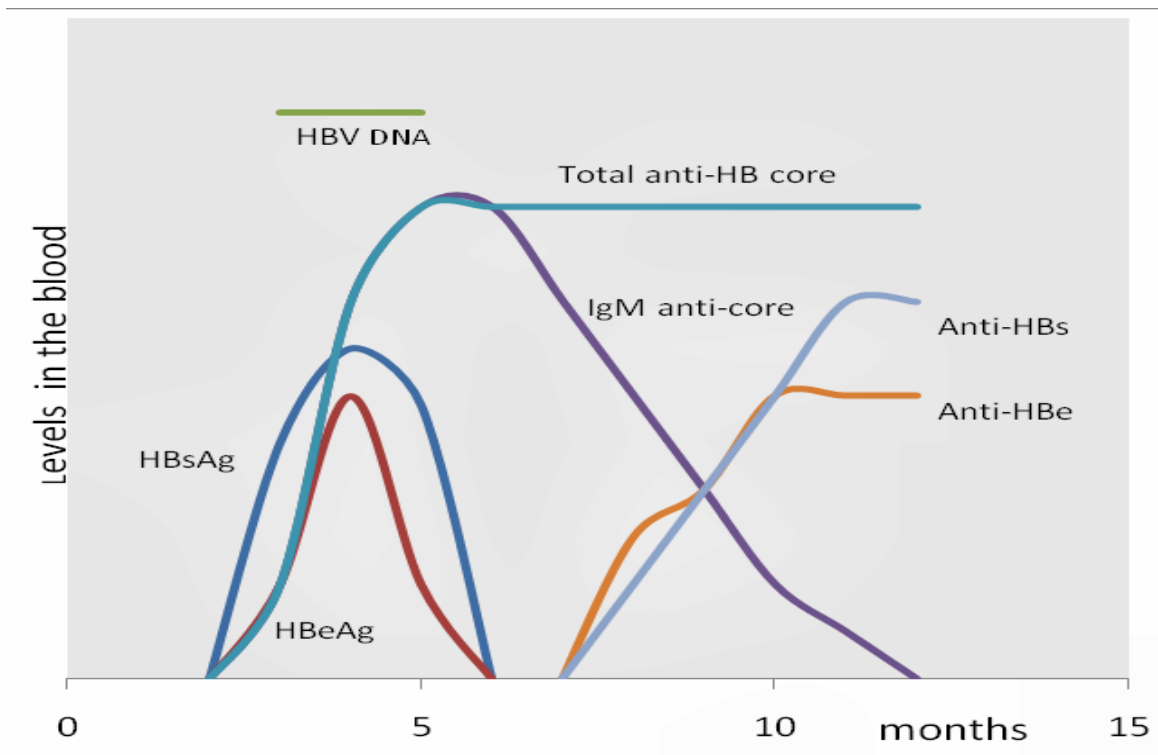


Fig: 7

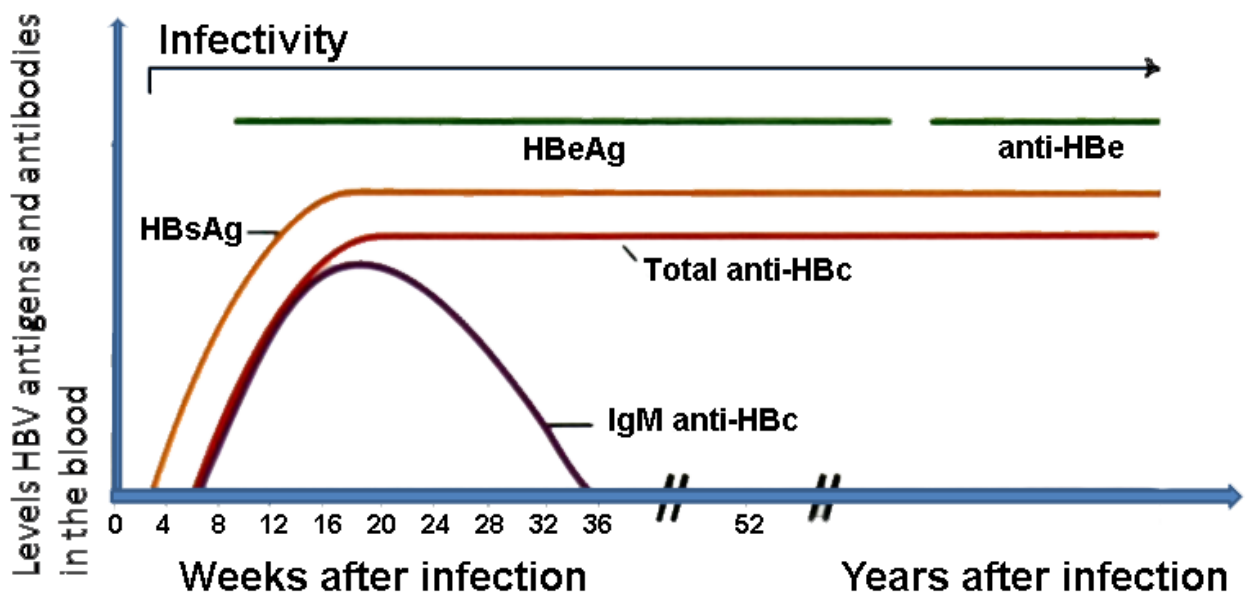


Fig: 8

The hepatitis B surface antigen (HBsAg) is most frequently used to screen for the presence of this infection. It is the first detectable viral antigen to appear during infection. However, early in an infection, this antigen may not be present and it may be undetectable later in the infection as it is being cleared by the host. The infectious virion contains an inner "core particle" enclosing viral genome. The icosahedral core particle is made of 180 or 240 copies of core protein, alternatively known as hepatitis B core antigen, or HBcAg. During this 'window' in which the host remains infected but is successfully clearing the virus, IgM antibodies to the hepatitis B core antigen (anti-HBc IgM) may be the only serological evidence of disease. Shortly after the appearance of the HBsAg, another antigen named as the hepatitis B e antigen (HBeAg) will appear. Traditionally, the presence of HBeAg in a host's serum is associated with much higher rates of viral replication and enhanced infectivity; however, variants of the hepatitis B virus do not produce the 'e' antigen, so this rule does not always hold true. During the natural course of an infection, the HBeAg may be cleared, and antibodies to the 'e' antigen (anti-HBe) will arise immediately afterwards. This conversion is usually associated with a dramatic decline in viral replication. If the host is able to clear the infection, eventually the HBsAg will become undetectable and will be followed by IgG antibodies to the hepatitis B surface antigen and core antigen, (anti-HBs and anti HBc IgG). The time between the removal of the HBsAg and the appearance of anti-HBs is called the window period. A person negative for HBsAg but positive for anti-HBs has either cleared an infection or has been vaccinated previously. Conventional diagnosis of current or past HBV infection is based on immunoassays for HBsAg, anti-HBs, anti-HBc, IgM anti-HBc, HBeAg, and anti-HBe, combinations of which can indicate the stage of infection, viral replication and infectivity, and the immune status. Although seropositivity for HBeAg has often been used as a surrogate marker for viral replication, it is unreliable in

infections by precore or core promoter HBV mutants.⁸³ In contrast to the serum levels of liver enzymes, which reflect hepatocyte lysis, measurement of HBV DNA in serum provides direct qualitative and quantitative information on viraemia.⁸⁴ Quantitative real-time polymerase chain reaction (PCR) assays for HBV DNA offer increased sensitivity with detection threshold down to 10(2) copies/mL. In the majority of dialysis patients, testing for HBsAg is sufficient for the diagnosis of HBV infection. Nevertheless, a negative HBsAg test does not preclude absolutely the presence of occult HBV infection. As an example, one Canadian study screened 241 chronic hemodialysis patients for occult hepatitis B virus infection by HBV DNA testing based upon real-time polymerase chain reaction (PCR).⁸⁵ Two patients (0.8 %) were HBsAg positive, while nine (3.8 %) of the remaining 239 HBsAg negative patients were HBV DNA positive. Occult HBV infection has been defined by positivity in nested PCR assays for the pre-S/S, pre-Core/Core, and X viral regions with sensitivity down to 10 copies/mL. In patients with chronic HBV infection, determination of HBeAg/anti-HBe status is indicated in case of hepatitis flare, or when anti-viral treatment is considered. Serial testing of alpha-fetal protein levels is important for the early diagnosis of hepatocellular carcinoma in HBsAg positive patients. Testing for HBV DNA may be indicated in patients with hepatitis who are positive for anti-HBc, but negative for HBsAg, anti-HBs, anti-HCV, and HCV RNA.

Tests for antibodies to HCV (anti-HCV) are the mainstay of the clinical diagnosis of HCV infection due to technical difficulties in detecting HCV RNA. Enzyme linked immunosorbent assays (ELISA) and recombinant immunoblot assays (RIBA) have been used to detect non-neutralizing antibodies. ELISA detects antibody to a specific HCV antigen (first generation tests) or to a combination of antigens (second and third generation tests) in a standard ELISA plate. In contrast, the RIBA detects antibodies to one or more HCV antigens on a strip that is read

visually. While ELISAs have been used as screening tests RIBAs have been considered confirmatory tests by virtue of their increased specificity. The second generation tests can detect seroconversion as early as four weeks after exposure⁸⁶. The third generation anti-HCV tests, which are currently largely in use, have shown better performance than the previous two generations of anti-HCV tests.⁸⁷ In addition, the window period has been further reduced, and is estimated at a mean of 70 days⁸⁸ Currently, the detection of anti-HCV antibodies should be done with the use of third generation ELISA⁸⁹

TESTS FOR HCV RNA — The detection of HCV RNA by reverse transcriptase polymerase chain reaction (PCR) has been used as the "gold standard" to identify current HCV infection In patients with post-transfusion non-A, non-B hepatitis (NANBH) due to HCV, high levels of HCV RNA in the circulation can be detected by PCR within one week of exposure and prior to the appearance of anti-HCV antibodies or elevations in ALT levels.⁹⁰ There are two types of PCR assays presently available – qualitative and quantitative.

Qualitative polymerase chain reaction assay — The qualitative PCR assays report results as the presence or absence of HCV RNA. These assays are considered the most sensitive tests for the diagnosis of HCV infection. However, they are not intended to be used as screening tests for detection of HCV infection.⁹¹ The reliability of these tests might be limited by false positive and negative results.

False negatives — Imperfect handling and/or storage of blood samples can lead to failure to detect HCV RNA in up to 40 percent of samples.⁹² Whole blood anticoagulated with EDTA or with mixed anticoagulants (CPDA-1 and EDTA) may be stored at up to 25 ° C (room temperature) for up to five days without any significant loss in plasma HCV RNA level.

False positives — PCR can detect very low levels of HCV RNA⁹³ and rigorous measures are required to prevent false positive results from even minor contamination.

Quantitative assays for HCV RNA — Quantitation of HCV RNA titers, i.e., defining the number of HCV RNA copies per milliliter of serum, can be done with the use of quantitative reverse transcriptase PCR (RT-PCR) assays or branched-chain DNA (bDNA) assays. Several quantitative HCV RNA assays are commercially available. One study found that the lower limit of detection for a currently used bDNA assay is 200,000 RNA genome equivalents/mL, while the limit of detection of the RT-PCR method is fewer than 100 RNA genome equivalents/mL. Thus, the quantitative RT-PCR assay is theoretically three orders of magnitude more sensitive than the bDNA assay.⁹⁴

Significant shortcomings of the quantitative RT-PCR assays are their labor-intensive performance, lack of standardization, and wide variations in sensitivity and specificity. By comparison, the bDNA assays are automated, simpler to perform, and more reproducible, but less sensitive than the quantitative PCR tests. In clinical practice, quantitative tests for HCV RNA should not serve as an initial diagnostic tool for HCV infection, but should be reserved for pretreatment evaluation and monitoring patient response to anti-viral treatments. Because of the great variability in sensitivity and lack of standardization across assays and laboratories, when a patient is tested repeatedly, particularly during monitoring the response to anti-viral therapy, it is critical to use the same test and the same laboratory where previous testing was performed.

TESTS FOR HEPATITIS C CORE ANTIGEN — Tests have been developed to detect the presence of viral antigenemia using a monoclonal antibody to the HCV core antigen (HCVcAg). A commercial ELISA test for "free" HCVcAg is available in some countries.⁹⁵ Other tests that detect "total" HCVcAg, both free and complexed with anti-HCV antibody, are presently

undergoing evaluation. Preliminary results indicate that assays for HCVcAg have excellent correlation with virologic tests for HCV RNA and make possible to detect HCV infection prior to anti-HCV seroconversion, confirm anti-HCV positive status, assess patient infectivity, depict those anti-HCV patients who are most likely to be viremic, and monitor the dynamics of the infection as well as the therapeutic response in individuals receiving anti-viral treatments. In addition, HCVcAg is a stable substance in contrast to HCV RNA, and extra precautions for handling and storage of blood specimens are expected to prove unnecessary. Overall, these tests seem to be a viable alternative to HCV RNA testing and are likely to find a large clinical application.

DIFFICULTIES IN INTERPRETING HCV TESTS — Two combinations of anti-HCV and HCV RNA results among patients exposed to the hepatitis C virus can produce difficulties in the interpretation of test results: the anti-HCV positive and HCV RNA negative patient, and the anti-HCV negative and HCV RNA positive patient.

The anti-HCV positive and HCV RNA negative patient — The anti-HCVAb tests that are currently licensed for clinical use detect non-neutralizing antibodies to recombinant HCV antigens. As a result, the presence of anti-HCVAb does not necessarily imply the presence of HCV RNA in the serum. As an example, HCV RNA has been detected in only 52 to 93 percent of dialysis patients who are anti-HCVAb positive. However, preliminary evidence suggests that the presence of IgM anti-HCVAb may serve as a complementary marker of virus replication ⁹⁶. Several possibilities could account for the presence of anti-HCV in the absence of HCV RNA:

1. HCV may be sequestered at sites other than the blood stream, such as the liver or peripheral blood mononuclear cells.
2. Viremia could be intermittent. HCV RNA may therefore not be present in the plasma at the time of testing.
3. The number of copies of HCV RNA may be below

the limit of detection. 4. Antibody to HCV may persist even after the viral RNA has disappeared, representing patients who had been infected with the virus, but no longer harbor it. 5. Anti-HCVAb may have been passively acquired from blood transfusions. In this situation, anti-HCV would disappear over the next few weeks in keeping with the half-life of IgG. 6. False positive results can occur due to nonspecific reactions, a problem which has been largely resolved with the use of ELISA in combination with RIBA.

The anti-HCV negative and HCV RNA positive patient — Although more than 90 percent of non-immunosuppressed individuals with HCV infection test positive for anti-HCV some patients are anti-HCVAb negative despite being positive for HCV RNA. Possible explanations for this result include: 1. The anti-HCV test may not be sensitive enough to detect existing anti-HCV antibody. This may result from either a low titer of antibody or because the antigen used in the assay system cannot detect the serum antibody response to the particular genotype. 2. Various diseases, conditions, or pharmacologic immunosuppression could suppress or modify the anti-HCV response. Among HCV RNA positive transplant recipients, anti-HCVAb was detected by ELISA-1, ELISA-2 and RIBA-2 in 35, 70, and 52 percent, respectively⁹⁷ 3. The patient may be in the "window" period between infection and anti-HCV seroconversion. 4. After anti-HCVAb has persisted for a certain period of time, it can disappear despite the persistence of HCV RNA. 5. In addition to the above possibilities, HCV RNA has been detected in the peripheral blood mononuclear cells from hemodialysis patients without anti-HCV or HCV RNA in the serum. The HCV RNA in these cells could therefore serve as a viral reservoir and further frustrate efforts to identify HCV infection.

KDIGO GUIDELINES FOR HCV TESTING — The Kidney Disease: Improving Global Outcomes (KDIGO) clinical practice guidelines for hepatitis C in chronic kidney disease were

published in 2008. The guidelines recommend the following for HCV testing in patients on maintenance hemodialysis: 1. With the initiation of hemodialysis or transfer from another hemodialysis facility, testing with EIA (and, if positive, followed by PCR) should be considered if the new hemodialysis facility has a low prevalence of HCV. 2. With the initiation of hemodialysis or transfer from another hemodialysis facility, testing with PCR should be considered if the new hemodialysis facility has a high prevalence of HCV. 3. Repeat testing with EIA should be performed in patients who are negative for HCV. 4. PCR should be performed in patients with unexplained abnormal aminotransferase levels. 5. In the setting of possible nosocomial infection, PCR should be performed in all patients who may have been exposed. KDIGO guidelines also recommend tailoring HCV testing to the prevalence of HCV infection in the specific dialysis unit, region, or country, and the patient's risk factors for acquiring HCV infection: A. Patients in dialysis units with a high prevalence of HCV infection should be tested once for HCV RNA, as it is likely that many of the EIA-negative patients can be HCV RNA-positive. B. EIA-negative patients who are likely to be at high risk for acquiring HCV infection should be tested for HCV RNA. Incident dialysis patients, who are highly likely to be infected with HCV, should be tested for HCV RNA on admission to the unit. C Patients in dialysis units with low prevalence of HCV or from low-prevalence regions or countries, as well as patients, who are at low risk of acquiring HCV, should be tested with EIA.

Because of these limitations, liver biopsy remains the only reliable method of confirming the presence and assessing the severity of liver disease in patients with HCV infection. Liver histology at the time of initial presentation has been shown to be a good predictor of intermediate and long term outcome in renal transplant recipients with liver disease.⁹⁸ In kidney transplant recipients who acquire HCV infection perioperatively or in the post transplant period may

demonstrate markedly delayed or even absent antibody response to HCV due to profound impairment in humoral immune response associated with the state of iatrogenic immunosuppression.

OVERVIEW OF MANAGEMENT — Dialysis patients with chronic HBV infection should have regular monitoring of parenchymal and ductal liver enzymes, and serum albumin concentration, preferably at six to eight week intervals. Prothrombin time should also be measured when there is evidence of severe hepatitis or cirrhosis. In addition, serum alpha-foeto protein levels should be measured every three to four months and liver ultrasound performed at least annually. Since the biochemical manifestations often cannot reliably indicate the status of liver histology, it would be ideal if a liver biopsy is available to best assess the activity of HBV related liver disease and the extent of cirrhotic changes. However, the role and optimal timing of liver biopsy in otherwise asymptomatic patients without clinical or biochemical abnormalities remain to be defined. Decisions on management for an individual patient must also take into consideration the level of HBV DNA in serum and the estimated waiting time before a kidney allograft is available. For practical purposes, liver biopsy is recommended when anti-viral treatment is being considered. Availability of histological information is also preferred before kidney transplantation, to ascertain the activity of hepatitis and the degree of cirrhosis. However, while it is easy to arrange liver biopsy before living-donor kidney transplantation, the optimal timing for this procedure may be difficult to establish in localities with a long waiting time for transplantation.

Treatment — Decisions on the treatment of chronic HBV infection are based in part upon an accurate assessment of the presence or absence of virus replication and active liver disease. As previously mentioned, this usually involves testing for HBV DNA and HBeAg, measuring the

serum ALT concentration, with or without a liver biopsy. Based upon these and other clinical findings, optimal therapy may involve the administration of interferon-alfa, nucleoside or nucleotide analogues, combination therapy, liver transplantation or only observation. A paucity of data exists concerning the optimal therapy of chronic HBV infection in dialysis patients. Few small studies have examined the use of interferon-alfa and nucleoside or nucleotide analogues in this patient population.

Interferon-alfa — There is little data on interferon-alfa treatment in dialysis patients with HBV infection.⁹⁹ Side effects of standard interferon-alfa are more pronounced in dialysis patients, especially with regard to the exacerbation of anemia and protein malnutrition¹⁰⁰. Preliminary data suggest that pegylated interferon might be better tolerated in patients with renal failure, although its efficacy and safety in hepatitis B treatment in this patient population remains undefined.

Nucleoside or nucleotide analogues — Lamivudine, an oral nucleoside analogue that interferes with the reverse transcriptase of HBV and terminates the nascent proviral DNA. It is the first in this class of drugs approved for the treatment of hepatitis B. Its safety and lack of significant adverse effects relate to the sparing of mitochondrial DNA and marrow progenitor cells.¹⁰¹ In nonimmunosuppressed individuals without renal dysfunction, lamivudine has proven efficacy in reducing the level of circulating HBV DNA, improving transaminasemia, and ameliorating hepatic necroinflammatory activity. There is evidence that lamivudine is also effective in dialysis patients and renal allograft recipients, resulting in the suppression of viral replication and aminotransferase normalization in more than 80 % of patients.¹⁰⁰

After treatment durations lasting 10 to 14 months, lamivudine therapy cleared HBeAg in over 20 percent of patients, and suppressed HBV DNA to undetectable levels in 50 to 100 %. There is

little information on histological changes after treatment in dialysis patients. However, the selection of drug-resistant variants after prolonged treatment with lamivudine presents a major limitation.¹⁰² Such resistance, occurring in around 15 % of patients after 12 months, more than 30 % after two years, and over half of patients after three years of lamivudine therapy, is almost universally associated with mutations in the highly conserved YMDD (tyrosine, methionine, aspartate, aspartate) nucleotide-binding motif of the major catalytic domain of the HBV RNA dependent DNA polymerase. The emergence of lamivudine resistance can be associated with potentially life-threatening exacerbation of liver disease. Lamivudine is no longer regarded as the preferred first-line therapy for hepatitis B. In treatment-naïve subjects, the rate of emergence of drug resistance is lowest with entecavir monotherapy, followed by adefovir, then telbivudine.

For the management of lamivudine-resistant HBV infection, adefovir add-on therapy has been associated with a high response rate and a lower rate of subsequent resistance compared with switching to adefovir monotherapy¹⁰³. However, since adefovir is nephrotoxic, it is advisable to avoid the use of adefovir in dialysis patients with residual renal function, because the latter confers survival benefit. Switching lamivudine to entecavir monotherapy is also effective in viral suppression, but progressive emergence of entecavir resistance with prolonged treatment could pose a problem. Accumulating data suggest that tenofovir can be an effective alternative in patients with lamivudine-resistant HBV infection¹⁰⁵. It is recommended that effective treatment be started early after the emergence of lamivudine resistance, both to prevent hepatitic flares and to reduce the risk of subsequent development of multiple drug resistance.

Recommendations — Although detailed criteria for the proper selection of dialysis patients for treatment of HBV and the choice of therapeutic agents may vary among individuals, some general principles apply. The aim of treatment is to minimize the progression of liver disease.

Treatment is indicated in HBsAg-positive patients with evidence of disease activity, as indicated by viral replication and abnormal transaminase levels, preferably corroborated by examination of liver histology. A level of $10^{(5)}$ copies/mL for HBV DNA has been taken as the threshold to start treatment. With the advent of more sensitive quantitative assays, it remains to be investigated whether a lower cut-off level may be more appropriate. It is important to realize that HBeAg can be negative in patients with precore- or core promotor-mutant infection despite active disease. In view of the side effects of interferon in patients on dialysis, nucleotide or nucleoside analogues are better choices and examples include entecavir and telbivudine. In patients with lamivudine-resistant HBV infection, switching to entecavir or tenofovir may be considered.

Post-transplantation, all patients should be closely monitored for viral relapse, hepatitis flares, and hepatic dysfunction. Issues related to the treatment of hepatitis B virus infection in kidney transplant recipients include the specific manifestations of the disease, whether antiviral therapy is currently being administered and the choice of antiviral therapy.

Antiviral naive patients — For patients who underwent kidney transplantation prior to the availability of oral antiviral therapies for preventive therapy, the decision regarding when antiviral therapy should be initiated is based upon the degree of elevation of aminotransferases, liver histology, HBV serology, and HBV DNA levels. Kidney transplantation patients tend to have higher HBV DNA levels due to immunosuppression while ALT may be lower, compared to those in the nontransplant setting. Thus, serum HBV DNA and liver histology may be better indicators for treatment than the ALT level.

Antiviral agents — The optimal antiviral agent(s) for the treatment of renal transplantation recipients with chronic hepatitis B infection is unclear. In the non-renal transplant population, options include interferon and five currently approved oral antiviral therapies: lamivudine,

adefovir, entecavir, telbivudine, and tenofovir. Entecavir, telbivudine, and tenofovir are the most potent, followed by lamivudine and then adefovir. Entecavir and tenofovir are associated with the lowest risk of drug resistance, followed by adefovir, then telbivudine and lamivudine. There is very limited data on the use of these agents in kidney transplant patients. Lamivudine has been most extensively used in this setting, but it is associated with a high rate of drug resistance. Adefovir has been less frequently used, due in part to potential nephrotoxicity with this agent. Tenofovir is also associated with a small risk of nephrotoxicity. There are few studies concerning the efficacy of entecavir and telbivudine in kidney transplant recipients. In the non-transplant patient, entecavir has been associated with the lowest rate of drug resistance and therefore may be the preferred treatment, since long-term therapy will be needed in most renal transplant patients. All five oral antiviral agents are renally excreted and, if used, dose adjustments must be made in patients with decreased estimated glomerular filtration rates. As a general rule, long-term therapy will be required and, thus, the use of nucleoside/tide agents that are associated with the lowest rates of resistance are preferred.

Although there are no studies in the transplant setting, suggest initial treatment with entecavir because of its relative potency, low rate of resistance with long-term treatment, and lack of nephrotoxicity compared with adefovir or tenofovir. Tenofovir may be an acceptable alternative, but it has a weaker antiviral effect and has been associated with nephrotoxicity. In those who have already begun treatment with lamivudine and have developed resistance, adefovir or tenofovir can be added to lamivudine (rather than stopping lamivudine), since combination therapy may reduce the development of resistance to the second drug. Since interferon alfa may precipitate acute allograft rejection, interferon alfa should not be used in kidney transplant recipients.

KDIGO guidelines — For dialysis patients, the 2008 KDIGO guidelines recommend therapy of most patients with chronic HCV infection monotherapy with standard interferon that is dose adjusted for a glomerular filtration rate less than 15 mL/min per 1.73 m².¹⁰⁶ Ribavirin is not recommended for patients with a creatinine clearance below 50 mL/min.¹⁰⁷ Similar concerns currently apply to pegylated interferon because of its long half-life.

Recommendations — At present, consider the use of IFNa in those dialysis patients with chronic active hepatitis on liver biopsy. In addition, IFNa therapy is advisable for HCV-infected dialysis patients who are candidates for kidney transplantation. Although there is a paucity of evidence to be able to make firm recommendations concerning dose and treatment duration, a regimen of three million units of interferon alfa-2b three times per week for 6 to 12 months (if tolerated) appears to be safe and effective in inducing biochemical and virological responses.¹⁰⁸ Close observation for significant side effects is mandatory.

Recommendations — The limited efficacy, high cost, increased risk of acute rejection, and significant side effects associated with the use of IFNa have dampened enthusiasm for its use among transplant recipients with chronic HCV infection. Consistent with this view is the NIH Consensus Statement on management of hepatitis C that currently lists renal transplant as a contraindication to treatment with interferon.

However, there are some life-threatening complications of HCV infection in which the benefits of treating may justify the risk of possible loss of the renal allograft with IFNa therapy. The 2008 KDIGO guidelines for HCV infection in patients with chronic kidney disease recommend that monotherapy with standard IFNa only be considered in kidney transplant recipients with HCV infection resulting in fibrosing cholestatic hepatitis or life-threatening vasculitis. They also state that the patient should be clearly informed of the risks prior to initiating therapy.

Ribavirin alone after transplantation — There are less data available on the efficacy of ribavirin alone in patients who cannot be treated with IFNa.

METHODS

This is a retrospective study to identify the Hepatitis B & C prevalence in hemodialysis and renal transplant patients, risk factors involved and the relevance of viral serology, PCR and liver enzymes in predicting the infection and outcome. The study was performed among patients from the department of Nephrology Christian Medical College, Vellore; a tertiary care institute in South India. The study protocol was approved by the institutional review board (IRB).

Study Patients:

The study population included all patients who underwent hemodialysis and subsequent renal transplantation in this center from June 2002 to December 2009. There were no specific inclusion or exclusion criteria to determine enrolment for the study.

Tests done:

The study population were subjected to the following test which included liver enzymes – SGOT and SGPT, hepatitis serology - HBsAg, Anti HBc, HCVAb in all patients and HBV and HCV PCR in selected patients. SGOT, SGPT and Alkaline phosphatase were evaluated by Hitachi 912 Autoanalyser. Liver function tests were done in pre dialysis sample in patients on haemodialysis. SGOT, SGPT > 45 IU / L was taken as abnormal. HBsAg – Screening was done by Rapid tridot test (Fast forward – Dr.Reddy's Lab Ltd., India) followed by confirmation by 3rd generation ELISA. (Hepanosticka Uniform II – Organon technika Netherlands, or MEIA – AxSYM, Abbott Lab, USA), HBsAg ELISA was repeated at three monthly intervals while on haemodialysis till renal transplantation. After transplantation these patients were rechecked for HBsAg if there was an increase (doubling) in the liver enzymes. It was applicable to those patients who were

recruited from 2003 to 2007. However for the renal transplant recipients from 2008 onwards HBsAg was done on a periodic interval even if there was no increase in liver enzymes. HB core antibody was screened by CORE (AxSYM, Abbott Lab, USA), followed by three monthly intervals while on dialysis. HCV – Rapid screening done by Rapid Tridot test and confirmation by HCV 3rd generation ELISA (AxSYM HCV version 3, Abbott Lab, USA). HCV ELISA was repeated at 3 monthly intervals while on haemodialysis till renal transplantation. After transplantation these patients were rechecked for HCVAb if there was an increase (doubling) in the liver enzymes. It was applicable to those patients who were recruited from 2003 to 2007. However for the renal transplant recipients from 2008 onwards HCVAb was done at periodic intervals even if there was no increase in liver enzymes. HBV PCR was done using artus HBV RG PCR kit, Qiagen, GmbH, Germany. The analytical detection limit of the kit for sensitivity is consistently 0.02 IU/ul ($p = 0.05$). This means that there is a 95% probability that 0.02 IU/ul will be detected. HCV PCR was done using artus HCV RG PCR kit, Qiagen, GmbH, Germany. All patients who underwent renal transplantation between 2002 June to 2007 December did not undergo routine evaluation of HBV or HCV PCR pre renal transplant except when there was an increase in liver enzymes with a clinical suspicion of an ongoing viral hepatitis. However from 2008 onwards all patients underwent both HBV and HCV PCR prior to renal transplantation as part of the protocol of renal transplantation practiced at this centre. However post transplantation it was done only if the enzymes level were elevated.

Patients on haemodialysis are segregated into 5 major groups with dedicated machines – isolated HBsAg, isolated HCV antibody, and combined HBsAg & HCV antibody positive, hepatitis B

core antibody positive and negative for all markers. Patients with isolated raised liver enzymes were not isolated unless ELISA for hepatitis or molecular tests are positive.

Blood transfusions in this centre and elsewhere and their role in seroconversion were analysed. The association of various infections, rejections, and new onset diabetes post transplant with seroconversion for both HBV and HCV were seen. The graft function and patient survival in the sero converted patients was compared with negative population.

Statistical analysis

Analysis was done by application of SPSS 9.0 software for windows. Chi-square test & student t test was used to determine difference in 2 groups wherever applicable. A P value of <0.05 was used to determine significance. The sample size was calculated as 350, assuming the incidence of infections to be 9% with a precision of $\pm 3\%$ and with 95% Confidence Interval.

RESULTS:

Patient demography -

A total of 500 patients were included in the study. The total number of males were 381(76.2%). The mean age of the patients were 34.8 +/- 12.3 years. The mean duration of follow up was 805+/-436 days. Among the 500 renal allograft recipients 30 received kidney from deceased donors while others were live related transplants. 60 patients received basiliximab (IL2 blockers) and 32 received anti thymocyte globulin as the induction agent while the majority never received any induction therapy. The native kidney disease was unknown in majority of the recipients. However among the known causes diabetic nephropathy and chronic glomerular diseases was found to be higher (Fig: 9). The triple immunosuppression of tacrolimus, mycophenolate mofetil and prednisolone were given to majority of the renal allograft recipients as maintenance immunosuppression. (Fig: 10)

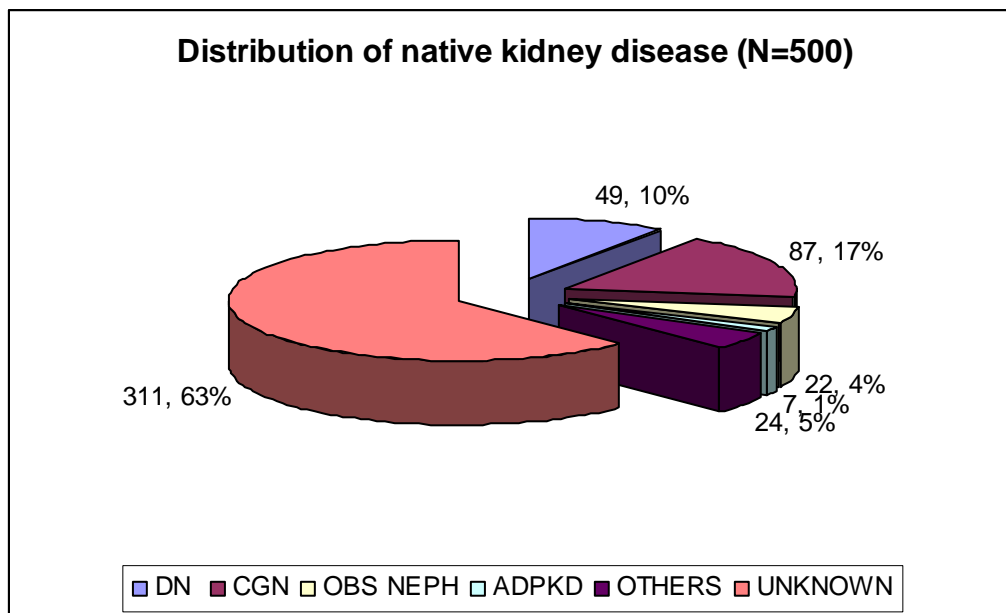


Fig: 9

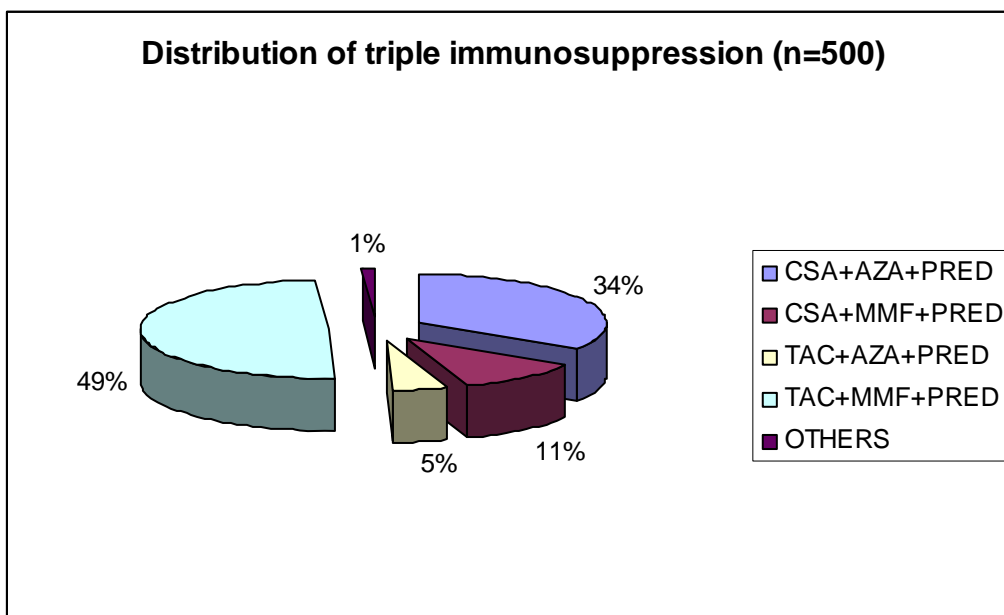


Fig: 10

Hepatitis B: 25 patients (5%) of the total population of 500 patients were hepatitis B surface antigen positive at entry to the hospital. The mean duration of dialysis was 151+/-134 days. Subsequently they underwent renal transplantation. Post transplant either for rise in liver enzymes or as a part of routine evaluation 343 patients were tested for HBsAg. There was an increase in the number of the sero positive patients from 25 to 31 (9%) suggesting reactivation of the virus or de-novo positivity post transplantation. (Table-1). Of the 31 patients 10 were HBsAg positive and 7 were hepatitis B core antibody prior to transplantation. However the remaining 21 patients (6%) are newly detected seroconverted patients. 369 patients received blood transfusions elsewhere. Of the 369 patients 327 received 4 units or less of blood and 42 received 5 units of blood or more. However the number of external blood transfusion did not affect HBsAg positivity either pre or post renal transplantation. (Table-2) In centre transfusion also did not influence HBsAg positivity pre or post renal transplantation.

Table - 1

	Pre-Tx	Post-Tx
HBsAg positive	N= 25/500 (5%)	N=31/343 (9%)
HCV Ab positive	N= 31/500 (4.2%)	N=20/282 (7.1%)
Anti HBc positive	N=90/455 (19.7%)	

Table – 2 PRE TRANSPLANTATION

BloodTx (exter)	HBsAg +ve	HBsAg -ve	P value
4 or <4	N=21/327(6.4%)	N=306/327(93.6%)	0.45
5 or >5	N=4/2 (9.5%)	N=38/42 (90.5%)	
BloodTx (incen)	HBsAg +ve	HBsAg -ve	P value
4 or <4	N=24/483 (4.9%)	N=459/483 (95.1%)	0.47
5 or >5	N=0/10	N=10/10 (100%)	

Table – 3 POST TRANSPLANTATION

BloodTx (exter)	HBsAg +ve	HBsAg -ve	P value
4 or <4	N=21/327(6.4%)	N=306/327(93.6%)	0.45
5 or >5	N=4/2 (9.5%)	N=38/42 (90.5%)	
BloodTx (incen)	HBsAg +ve	HBsAg -ve	P value
4 or <4	N=31/332 (9.3%)	N=301/332 (90.7%)	0.4
5 or >5	N=0/7	N=7/7 (100%)	

Table – 4

	Pre-Tx	Post-Tx
HBV PCR positive	N= 12/156 (7.7%)	N=12/50 (24%)
HCV PCR positive	N= 12/161 (7.5%)	N=14/45 (31.1%)

Table – 5 PRE TRANSPLANTATION

BloodTx (external)	HCV Ab +ve	HCV Ab -ve	P value
4 or <4	N=9/327 (2.8%)	N=318/327(97.2%)	<0.001
5 or >5	N=6/42 (14.3%)	N=36/42 (85.7%)	
BloodTx (incentre)	HCV Ab +ve	HCV Ab -ve	P value
4 or <4	N=19/483 (3.9%)	N=464/483 (96.1%)	0.37
5 or >5	N=1/10 (10%)	N=1/10(90%)	

Table – 6 POST TRANSPLANTATION

BloodTx (external)	HCV Ab +ve	HCV Ab -ve	P value
4 or <4	N=9/327 (2.8%)	N=318/327(97.2%)	<0.001
5 or >5	N=6/42 (14.3%)	N=36/42 (85.7%)	
BloodTx (incentre)	HCV Ab +ve	HCV Ab -ve	P value
4 or <4	N=19/483 (3.9%)	N=464/483 (96.1%)	0.37
5 or >5	N=1/10 (10%)	N=1/10(90%)	

Hepatitis B core antibody: 455 (91%) patients were tested for hepatitis B core antibody pre transplant. A total of 90 patients (19.7%) were core antibody positive pre transplantation. In the isolated core antibody positive group of 90 patients pretransplant, only 55 of them were tested for HBsAg post transplant. Of the 55 patients who were tested 9 (16.4%) were found positive for HBsAg. 251 patients who were negative for both HBsAg and hepatitis B core antibody 8 (3.2%) of them were found to be de novo positive for hepatitis B.

HBV DNA: 12 patients (7.7%) were positive for HBV DNA pretransplant out of 156 patients tested. These patients were also HBsAg positive except one who was negative. Therefore HBV PCR helped improve detection by 8.3%. Post transplant HBV PCR was done for 50 patients of which 12 (24%) were positive. 5 patients of those positive HBV DNA were core antibody positive & 4 were hepatitis surface antigen positive in the pretransplant period. PCR improved detection by 10% in the post transplant period. (Table-4)

Hepatitis C: 21 patients (4.2%) of the total population of 500 patients were HCV antibody positive at entry to the hospital. The mean duration of dialysis was 211+/- 118 days. Subsequently they underwent renal transplantation. Post transplant either for rise in liver enzymes or as a part of routine evaluation 282 (56.54%) patients were tested for HCV antibody. There were 20 patients (7.1%) who were HCV antibody positive post transplantation. Of the 20 patients 13 were positive pre transplant while the remaining 7 (2.4%) are denovo positive following renal transplantation. However when PCR technique was used an additional 5 patients were detected to be HBV positive. 369 patients received blood transfusions elsewhere. Of the 369 patients 327 of them received 4 or less and 42 received 5 or more blood transfusions. Those

who received 4 or less blood transfusions 2.8% were found to be HCV positive unlike 5 or more transfusions where 14.3% of the patients were positive which was statistically significant ($p<0.001$). In the post transplant patients also those who received 4 units of blood or less 4.6% were found to be HCV positive whereas in those who received 5 units or more 25% were positive ($p<0.001$). (Table-5, 6)

HCV DNA: 12 patients (7.5%) were positive for HBV DNA pretransplant of the 161 patients tested. These patients were also HCV antibody positive. Therefore HBV PCR did not help in further detection. Post transplant HCV PCR was done for 45 patients of which 14 (31.1%) were positive. 8 were HCV antibody positive in the pretransplant period while 5 were detected with PCR technique. Therefore HCV PCR improved detection by 42% in the post transplant period. (Table-4)

Liver enzymes: In the population positive for HBV the mean time for seroconversion was 210 ± 140 days and the mean liver enzymes were SGOT – 36.5IU and SGPT – 43.58 IU. However there was no rise in liver enzymes during the period of seroconversion. In the population positive for HCV the mean time for seroconversion was 290 ± 180 days and the mean liver enzymes were SGOT – 138.17 and SGPT – 116.08. Seroconversion was detected in the 6 month of follow up with considerable statistically significant elevation of liver enzymes unlike the HBV positive group. (Table -7)

Table – 7

		HBV			HCV		
Mean time		210±140 days			290±180 days		
Mean liver enzymes		SGOT - 36.05			SGOT - 138.17		
		SGPT – 43.58			SGPT – 116.08		
Mo post Tx	Liver enzymes	Sero convert	Nonsero convert	P value	Sero convert	Nonsero convert	P value
1	SGOT	69.17	41.42	0.03	55.22	40.75	0.205
	SGPT	80.87	60.65	0.24	73.63	60.43	0.426
3	SGOT	47.65	31.26	0.02	38.67	32.26	0.457
	SGPT	60.90	35.40	0.05	42.11	38.77	0.829
6	SGOT	40.43	31.09	0.102	59.44	29.12	<0.01
	SGPT	46.09	40.93	0.193	66.78	33.89	<0.002

Table – 8

Post Tx	HBsAg/PCR +ve (n=31)	HBsAg/PCR -ve (n=343)	P value	Post Tx	HCVAb/PCR +ve (n=20)	HCVAb/PCR -ve (n=282)	P value
NODAT (n=50)	7 (35%)	43 (20%)	0.07	NODAT (n=43)	4 (20%)	39 (21.4%)	0.88
Reject (n=74)	7 (30%)	67 (28%)	0.66	Reject (n=57)	5 (25%)	52 (28.5%)	0.99
UTI (n=128)	12 (52%)	116 (48%)	0.15	UTI (n=104)	12 (60%)	92 (50.5%)	0.11
TB (n=24)	1 (4.3%)	23 (10%)	0.39	TB (n=19)	1 (5%)	18 (9.8%)	0.54
Fungus (n=6)	1 (4.3%)	5 (2%)	0.52	Fungus (n=4)	1 (5%)	3 (1.6%)	0.28
Herpes (n=25)	2 (8.6%)	23 (9%)	0.94	Herpes (n=20)	3 (15%)	17 (9.3%)	0.28
CMV (n=40)	0 (0%)	40 (19.8%)	0.04	CMV (n=29)	4 (20%)	25 (23.8%)	0.54

Table – 9

	HBV +ve (n=31)	HBV -ve (n=31)	HCV +ve (n=20)	HCV –ve (n=262)
GFR ml/min (mean +/- SD)	66.35±26.75	76.18±30.35	76.23±40.15	77.13±29.5

Other associations:

New onset diabetes after transplant (NODAT) was found to be significantly higher in the HBV positive group. Of the 323 patient tested for Hepatitis B post transplant 28 patients had NODAT. 12 were from the hepatitis B positive group (pvalue 0.004). However in the hepatitis C population this significance was not seen. Other association like rejections and infections (UTI, fungus, tuberculosis, herpes and CMV) were not found significantly increased in the hepatitis B and hepatitis C positive population. (Table - 8)

Graft function was not adversely affected following seroconversion in the post transplantation period for either hepatitis B or C infected population. (Table - 9)

DISCUSSION:

The present study has studied all patients who underwent haemodialysis and subsequent renal transplantation at this center between June 2002 and December 2009. The study showed that the majority were male suggesting that in the Indian society males have better access to more sophisticated treatment like hemodialysis and renal transplantation. This study has emphasized the risk of multiple blood transfusions as the major risk factor in developing hepatitis B and C virus infections. There was a definite association of blood transfusions given elsewhere and HBsAg, Anti HBc, HCV positivity on entry to the hospital. However there was no significant association between transfusions in-centre and seroconversion, this is in concordance with other studies done in tertiary care centres where in-centre transfusions are less likely cause of transmission of hepatitis due to stringent screening for hepatotropic viruses.^{109, 110}

Screening for transfusion transmitted infection is unsatisfactory in many parts of India where only 6% of blood banks screen for HCV, 87% for HBV.^{111, 112} Dialysis and transplantation patients have a higher prevalence of transfusion associated infections like hepatitis than the general population.¹¹³ There was no significant association between dialysis in-centre and hepatitis B & C seroconversion in the present study. This is similar to a study done in the same centre during 1997 to 2001 and published in 2003⁴⁶ but in contrast to that study¹¹⁴ which showed 31% patients developed HBsAg while on dialysis and another study by the AIIMS group¹¹⁵ which showed similar results. The current scenario of decrease in prevalence may be explained by the shorter waiting period for transplantation, the stringent screening procedures of blood units for transfusion and separate dedicated machines for those infected by hepatotropic viruses.

The prevalence of hepatitis B in the Indian dialysis population ranges from 3.4% to 42% in various studies and hepatitis C in 12 to 15%¹¹⁶. A study from China revealed a higher prevalence of 37.5%. However studies from the west has shown a very low prevalence of <2%. The present study has confirmed the high prevalence compared to the general population (HbsAg –1.8%, HCV –1.02%). There was no correlation of Hepatitis B infection and liver enzyme abnormalities in the pre transplantation period, there was also no correlation of isolated liver enzyme abnormality with post transplant seroconversion of hepatitis B. This is in concordance with other studies which show decreased levels of transaminases in dialysis population .^{117, 118, 119}

The higher prevalence of core antibody positive patients in our study suggests past infection or persistent infection with low titres of HbsAg, not detected with conventional methods. This study has also noted the importance of screening for Hepatitis B core antibody in the pre transplantation period as 16.4% of the isolated core antibody (antiHBc) positive patients tested positive for HbsAg in the post transplantation period. Anti HBc screening is a reliable predictor of hepatitis infection as proved in studies done in transfusion recipients .¹²⁰

HBV DNA was tested only in a minority of patients in our centre till 2007 in view of the financial burden to the patients. However from 2008 it was routinely done as a matter of policy. Our study has shown that PCR helped improve detection by 8.3% pre transplantation and 10% post transplantation. It is a sensitive marker of infectivity.¹²¹ Therefore we suggest PCR molecular technique preferably be made mandatory so as to pick up infection faster and provide appropriate treatment and preventive measures. A proportion of patients who were positive post transplant were also HBc antibody positive (5) in the pretransplantation period. HBV PCR could have picked these patients.

Hepatitis C virus antibody was detected in a significant number of patients and they were associated with a high incidence of blood transfusions. There were a proportion of patients who were HCV antibody negative in the pre transplantation period, these patients were positive on testing for HCV RNA post transplantation. This study has shown that unlike HBV there was association between isolated liver enzyme elevation and hepatitis C positivity in the post transplantation period. This is contradictory to other studies, which showed the lack of significant liver enzyme elevation in the detection of hepatitis C virus infection including a study from the same centre 7 years ago. The mean liver enzymes were SGOT – 138.17 and SGPT – 116.08. This could be explained by the fact that liver enzymes were done a regular monthly interval once hemodialysis was initiated here which helped detection in the acute phase.

HCV RNA by PCR was positive in all of patients who were anti HCV positive in the pre transplantation period. However, not all patients who were HCV RNA positive in the post transplantation period had been tested for it in the pre transplantation period. PCR improved detection by 42% in the post transplantation period. This study demonstrates the importance of HCV RNA determination by PCR in the post transplantation period even without detectable circulating antibodies against HCV. This is in concordance with other studies¹²² which prove HCV RNA determination as the gold standard.

Association of new onset diabetes after renal transplant with Hepatitis C is well established. A 2005 meta-analysis of ten studies of 2,502 patients found that anti-HCV positive patients were nearly four times more likely to have NODAT compared with uninfected individuals.¹²³ In

addition, at least one group has shown decreased incidence of new-onset diabetes with treatment of hepatitis C infection prior to transplantation¹²⁴. This study has not found a statistically significant association of diabetes with HCV infection. However NODAT was significantly associated with Hepatitis B infection. But it may not be due to the infection but other confounding factors like steroids, tacrolimus or family history of diabetes. However these factors were not considered as a part of the study. There are no studies to substantiate this association. HCV association with other infections like CMV, TB, Cryptococcus and STD is well established.¹²⁵. Studies to substantiate these in post renal transplantation are lacking for both HBV and HCV.

LIMITATION

Being a retrospective study data is incomplete with regards to viral profile including Anti HBc, HBV and HCV PCR in the pretransplantation period and HbsAg, HCV Ab, anti HBc, HBV and HCV PCR in the post transplantation period. Uniform availability of other investigations like SGOT, SGPT are lacking. History of blood transfusions both in-centre and external are incomplete. Therefore these limitations should be considered in the interpretation of the results.

CONCLUSION

1. Prevalence of hepatitis B and hepatitis C infection doubled in the post transplantation period compared to the pre transplantation period. This could be explained by the reactivation of the viruses following immunosuppressive medications and de novo seroconversion either due to blood transfusion or from organ transplanted.
2. Multiple blood transfusions are a major risk factor for hepatitis B and hepatitis C infection. Therefore stringent screening techniques for blood and blood products are useful to prevent the infection.
3. Duration of hemodialysis is a significant risk factor for hepatitis C seroconversion post transplantation. Encouraging live related donors to shorten the waiting period for transplantation is beneficial.
4. Elevation of liver enzymes was seen only with hepatitis C seroconversion at an average of 6 months post transplantation. However liver enzymes remained within normal limits in the hepatitis B positive group post transplantation.
5. Screening for Anti HBc in the pre transplantation period is very useful to prevent HBV reactivation post transplantation. Therefore all patients undergoing renal transplantation should be routinely screened for anti HBc and consider them as potential population for reactivation post transplantation.
6. PCR techniques help to detect additional seropositive patients for hepatitis B and C in the post transplantation period.
7. Graft function is not affected in the hepatitis B and C positive patients at least in the initial 5 years of post transplantation period.

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APPENDIX

PROFORMA

- 1.Name : 2.Age:
 3.Sex : 4.Hosp. no. :
 5. Residence: 7. Occupation
 8. Dt. of Tx: 9. No. of Tx. 1 / 2 / 3
 10. Immunosuppression –
 CYA: No-0/ Yes-1
 Tac: No-0/ Yes-1
 Aza: No-0/ Yes-1
 MMF: No-0/Yes-1
 Siro: No-0/Yes-1
 Evero: No-0/Yes-1
 Pred: No-0/Yes-1
 11. Induction: No-0 / IL2-1 / ATGAM – 2 / OKT3 – 3
 12. Donor: Cadaver – 0 / Living – 1
 13. Dialysis (dt of starting) –
 14. Dialysis - No – 0 / HD -1 / PD – 2
 15. Blood Transfusion Internal: No-0 / if yes number=
 16. Blood transfusion External: No-0 / if yes number=
 17. PreTx: - S.Alb:
 18.SGOT
 19..SGPT
 20.Pre Tx HBsAg – Neg-0 / Pos-1
 21.Pre Tx HBeAg – Neg-0 / Pos-1
 22.Pre Tx HBV PCR – Neg-0 / Pos-1
 23.Pre Tx AntiHBC – Neg-0 / Pos-1 IgM / Total
 24.Pre Tx HCV ab - Neg-0 / Pos-1
 25.Pre Tx HCV PCR – Neg-0 / Pos-1
 26. Pre Tx: DM
 27. Pre Tx: UTI
 28. Pre Tx: TB
 29. Donor Name: Hosp. No. Age: Sex:
 30. Post Tx. Delayed Graft Function: Yes – 1 / No – 0
 31. Pt. Post Tx months: 3 6 9 12 24 36 42 54 66 78
- | | | | | | | | | | | |
|------|--|--|--|--|--|--|--|--|--|--|
| SGOT | | | | | | | | | | |
| SGPT | | | | | | | | | | |
32. Pt. PostTx: HBsAg – Neg-0 / Pos-1
 Pt. PostTx: HBeAg – Neg-0 / Pos-1
 Pt. PostTx: HBV PCR – Neg-0 / Pos-1
 Pt. PostTx: HCV ab – Neg-0 / Pos-1
 Pt. PostTx: HCV PCR – Neg-0 / Pos-1
 33. Post Tx. CMV: PCR Pos – 1/ Neg - 1 / PP65 Pos – 1/ Neg - 0
 34. Post Tx. TB
 35.Post Tx. BKV

36. Post Tx. DM

37. Post Tx Rejection episodes : Acute / Chronic

Vascular / Cellular

Rx – MP / ATG / OKT3

Response to Tx.

38. Post Tx. Graft function:

Months post Tx.	3 months	6 months	9 months	12 months	24 months	36 months	42 months	54 months	66 months	78 months
Creatinine										
eGFR										

39. HCV / HBV related CLD / malignancy

40. post transplantation malignancy

Glossary

hospno	hospital number
residenc	residence
nkd	native kidney disease
dotx	date of transplantation
notx	number of transplantation
ht	height
wt	weight
bgroup	blood group
csa	cyclosporine – 1 - yes / 0 – no
tac	tacrolimus – 1 - yes / 0 – no
aza	azathioprine- 1 - yes / 0 – no
mmf	mycophenolate mofetil / sodium 1 - yes / 0 – no
siro	sirolimus 1 - yes / 0 – no
evero	everolimus 1 - yes / 0 – no
pred	prednisolone 1 - yes / 0 – no
induc	induction No-0 / IL2-1 / ATGAM – 2 / OKT3 – 3
dialydt	date of dialysis
btransf	blood transfusion incentre
donor	1 – live related donor / 0 – cadaver
dialysis	1- hemodialysis / 2 – CAPD / 0 – preemptive
btext	blood transfusion elsewhere
salb	serum albumin 0 – normal / 2 - low
ot	sgot 0 – normal / 2 – raised
pt	sgpt 0 – normal / 2 – raised
prehbsag	pre transplantation HBsAg 0 negative / 1 positive
phbvpc_r	pre transplantation HBV PCR 0 negative / 1 positive/ 2 not done
preanthb	pre transplantation anti HBc 0 negative / 1 positive/ 2 not done
prehcvab	pre transplantation HCV antibody 0 negative / 1 positive
prhcvpcr	pre transplantation HCV PCR 0 negative / 1 positive/ 2 not done
dm	diabetes mellitus
uti	urinary tract infection
tb	tuberculosis
donornam	donor name
DGF	delayed graft function
salb3	serum albumin at 3 months 0 – normal / 2 – low
sgot3	sgot at 3 months 0 – normal / 2 – raised
sgpt3	sgpt at 3 months 0 – normal / 2 – raised
salb6	serum albumin at 6 months 0 – normal / 2 – low
sgot6	sgot at 6 months 0 – normal / 2 – raised
sgpt6	sgpt at 6 months 0 – normal / 2 – raised
salb9	serum albumin at 9 months 0 – normal / 2 – low

sgot9	sgot at 9 months 0 – normal / 2 – raised
sgpt9	sgpt at 9 months 0 – normal / 2 – raised
salb1yr	serum albumin at 1 year 0 – normal / 2 – low
sgot1yr	sgot at 1 year 0 – normal / 2 – raised
sgpt1yr	sgpt at 1year 0 – normal / 2 – raised
salb2yr	serum albumin at 2 year 0 – normal / 2 – low
sgot2yr	sgot at 2 year 0 – normal / 2 – raised
sgpt2yr	sgpt at 2year 0 – normal / 2 – raised
salb3yr	serum albumin at 3 year 0 – normal / 2 – low
sgot3yr	sgot at 3 year 0 – normal / 2 – raised
sgpt3yr	sgpt at 3 year 0 – normal / 2 – raised
salb4yr	serum albumin at 4 year 0 – normal / 2 – low
sgot4yr	sgot at 4 year 0 – normal / 2 – raised
sgpt4yr	sgpt at 4 year 0 – normal / 2 – raised
salb5yr	serum albumin at 5 year 0 – normal / 2 – low
sgot5yr	sgot at 5 year 0 – normal / 2 – raised
sgpt5yr	sgpt at 5 year 0 – normal / 2 – raised
salb6yr	serum albumin at 6 year 0 – normal / 2 – low
sgot6yr	sgot at 6 year 0 – normal / 2 – raised
sgpt6yr	sgpt at 6 year 0 – normal / 2 – raised
hbvpcr	post transplantation HBV PCR 0 negative/1 positive/2 not done
hbsag	post transplantation HBsAg 0 negative/1 positive/2 not done
hcvab	post transplantation HCV Ab 0 negative/1 positive/2 not done
hcvpcr	post transplantation HCV PCR 0 negative/1 positive/2 not done
cmvpcr	CMV PCR 0 – negative, 1 – positive , 3 – not done
pp65	0 – negative, 1 – positive , 3 – not done
herpes	0 – absent / 1 – present
nocardia	0 – absent / 1 – present
fungus	0 – absent / 1 – present
posttb	post transplantation tuberculosis 0 – absent / 1 – present
postuti	post transplantation UTI 0 – absent / 1 – present
pourosep	post transplantation urosepsis 0 – absent / 1 – present
bkv	0 – negative, 1 – positive , 3 – not done
postdm	post transplant diabetes mellitus
postmali	post transplant malignancy 0 – absent / 1 – present
hcvmali	HCV driven liver malignancy 0 – absent / 1 – present
hbvcld	HBV related cld 0 – absent / 1 – present
hcvcld	HCV related cld 0 – absent / 1 – present
maliganc	HCV driven malignancy 0 – absent / 1 – present
rejectio	rejection Acute / Chronic
type	Vascular / Cellular
treatmen	Rx – MP / ATG / OKT3
response	Response to Tx.
creat3	creatinine at 3 months post transplantation
egfr 3	estimated GFR at 3 months post transplantation
creat6	creatinine at 6 months post transplantation

egfr 6	estimated GFR at 6 months post transplantation
creat9	creatinine at 9 months post transplantation
egfr 9	estimated GFR at 9 months post transplantation
creat1yr	creatinine at 1 year post transplantation
egfr 1yr	estimated GFR at 1 year post transplantation
creat2yr	creatinine at 2 year post transplantation
egfr 2yr	estimated GFR at 2 year post transplantation
creat3yr	creatinine at 3 year post transplantation
egfr 3yr	estimated GFR at 3 year post transplantation
creat4yr	creatinine at 4 year post transplantation
egfr 4yr	estimated GFR at 4 year post transplantation
creat5yr	creatinine at 5 year post transplantation
egfr 5yr	estimated GFR at 5 year post transplantation
creat6yr	creatinine at 6 year post transplantation
egfr 6yr	estimated GFR at 6 year post transplantation
creat7yr	creatinine at 7 year post transplantation
egfr 7yr	estimated GFR at 7 year post transplantation
9	data not available

NAME	AGE	SEX	HOSPNO	RESIDENC	NKD
Sachin More	24	1	401761D	bihar	Unknown
Bhudan konwar	34	1	802551C	Assam	Unknown
Amina begum	34	2	361864C	Banglade	Unknown
Raymond Rakesh	33	1	507523C	Bihar	Diffuse global GS
Purnima Mukerjee	32	2	116463C	WB	Lupus Nephritis
Zopuii	37	2	408578C	Mizoram	Unknown
Khaidem kulabati	31	2	767100c	Manipur	Unknown
Bonifila basan	19	1	857238B	Shilong	IgA Nephropathy
Chandan rajak	21	1	973475C	WB	Unknown
Rajakumar R	46	1	597928C	w.bengal	Diabetic Nephropathy
Mithu kundu	21	1	255093C	WB	Chronic GN
Gangadharan	60	1	197089C	TN	Diabetic nephropathy
Abhijit mukherjee	27	1	797140C	Student	Chronic glomerulonephritis
Adnam Rabbi	24	1	850155C	Banglade	Unknown
Arnab chakraborty	38	1	897028B	TN	FSGS
Govind kumar singh	23	1	287996C	Lucknow	Unknown
Md.Abdul Mamin	26	1	729320C	banglade	Unknown
Prem sagar Chapala	52	1	643990C	AP	Diabetic Nephropathy
Zairo thangi	41	2	018182B	Manipur	MPGN
Satya kumar	15	1	116312C	TN	CIN
Manaskundu	26	1	002593D	WB	Unknown
Tshering Dorji	36	1	079345D	BHutan	Unknown
Japankr basik	48	1	278236C	WB	CIN
Laxmilalsoni	45	1	631466c	Chattisg	Unknown
Sunil karmakar	49	1	322606C	WB	Unknown
Md Saleem	53	1	160774B	Jharkhan	FSGS
Khajahussain	23	1	505466C	AP	Chronic pylonephritic
Sribash sarkar	34	1	406950C	Tripura	Unknown
Jana Ranjan	26	1	960631C	Karnataka	IgA nephropathy
Maipa	47	1	560168c	Mizoram	Unknown
Yanzom	46	2	423775C	Bhutan	Unknown
Kamala dangual	33	2	830515c	bhutan	unknown
Kamalachakraborty	29	2	990676B	Burdwan	Alport syndrome FSGS
Sekar E	45	1	839209c	AP	Diabetic Nephropathy
Neelavathi	36	2	769135C	AP	Unknwn
Shailndera n. Singh	43	1	664575C	Jamshed	Diabetic nephropathy
Dasho tshetrim	54	1	506636C	Bhutan	Diabetic Nephropathy
Kapthianga H	56	1	833825C	Mizrom	Diabeticnephropathy
Shika	14	2	858606C	Banglade	Mesangio proliferative GN
Lakshmi	37	2	261315C	Jharkhand	Unknown
Nagenderakumar	23	1	660957C	Jharkhand	Unknown
Bhudev Pradhan	57	1	161038D	Orrisa	Diabetic nephropathy
Sunil Chandra Dhubar	38	1	370229c	WB	Unknown
Subodh Kr Soni	47	1	393206D	MP	Unknown
Vijay	23	1	772422A	TN	FSGS + VUR
Muralidharan	53	1	243697D	Orrisa	Unknown
Suresh Kumar Raju	34	1	134926C	Orrisa	Unknown
Devendra Nath Singh	59	1	369127D	Jharkhand	Hyperlemia Nephrosclerosis
Dilip Pillai	26	1	349420D	Kerala	Unknown
Ugyen Tenzin	40	1	290312D	Bhutan	Unknown
Kisan Jigme	57	1	373003d	arunachal	Diabetic Nephropathy
Dorjee Kondu Lawa	50	1	018393D	Arunachal Pr	Diabetic Nephropathy
Jyoshna Gorai	46	2	019473D	WB	Diabetic Nephropathy
Sheela P.	34	2	921667C	t.nadu	Unknown
Mohan Ram Sahu	42	1	985044C	Jharkhand	Unknown
Kalai Selvi	50	2	642867B	TN	Mesangioproliferative GN
Shanthi A	43	2	048214D	T. Nadu	Diabetic Nephropathy
Jayabalan	54	1	970279C	TN	Arteriolonephrosclerosis
Haribabu	39	1	129520B	TN	FSGS
Deshbandu paul	30	1	434800c	WB	Unknown
Rajib bhuyan	33	1	808528C	Assam	Unknown
Remissemia	45	1	199560D	Mizoram	Diabetic Nephropathy
Francis A.J.	49	1	532047B	AP	Unknown
Janab	51	1	282982D	Bhutan	Unknown
Ugyenpem	9	2	170912D	Bhutan	Renal calculous disease
Peldan	56	1	256276D	Bhutan	Unknown
Seeru Kumar Deuri	18	1	451891C	Assam	IgA Nephropathy
Samrita lohani	27	2	547438C	Nepal	IgA nephropathy
Ugeyenla	41	1	968357C	Bhutan	Unknown
Udayabanu	35	1	426091D	Kerala	FSGS

Pema Wangde	54	1 322404D	Bhutan	Unknown
Ejaz Ahmed	46	1 005735D	TN	Unknown
Wadawan Thoo	23	2 147311D	Megalaya	Unknown
Munshi mahato	36	1 354927c	Bihar	Obstructive uropathy
Md.Showkat Noman	30	1 414698c	bangladesh	Unknown
Sayan dutta	17	1 830544C	WB	Reflux nephropathy
Lalnuhiliri	38	2 969968c	Mizroam	Unknown
Md Habilluddin	29	1 789397C	Assam	Unknown
Jannatul Ferdaus	28	2 846905C	BD	Unknown
John mosses	29	1 047012D	TN	Unknown
Jamansingh	53	1 684825C	Bhutan	Diabetic Nephropathy
Sanjay Kr. Das	37	1 199303D	WB	Unknown
Narmaya Mongar	28	2 303305D	Bhutan	Unknown
Nand kishore sarkar	41	1 818426C	w. bengal	IgA nephropathy
Indu Devi	40	2 826599C	MP	Unknown
Nand kishore	22	1 329734C	Jharkhand	mesangioproliferative GN
Joselyn ch Rev	48	1 879970c	TN	Unknown
Prabhakar dubey	16	1 559417C	Bihar	Obstructive uropathy
Samit Kr Deya	38	1 566491D	WB	Unknown
Anbarasu M.	21	1 329853D	TN	Unknown
Lalrinzuali	42	2 194205D	Mizoram	Unknown
Dilip kumar	32	1 554608c	Jharkhan	Unknown
Pooja CM	17	2 369291B	KN	FSGS
Lemo Yongam	55	1 353673D	Bhutan	Unknown
Khalaimbhor Remong	24	1 731358C	Shillong	IgA Nephropathy
Rubir dhar choundry	40	1 391429c	WB	
Richard	28	1 745105C	Mizrom	Unknown
Dipta dutta	39	2 984100c	WB	unknown
Lalrinthulagai	36	2 882089c	Mizoram	Analgeric nephropathy
Gayley Namgay	30	1 492697D	Bhutan	Unknown
Rajeswar singh	48	1 944488C	UP	IgA nephropathy
Azadualislam	32	1 367476c	Bangladesh	Unknown
Khaja Hussain	26	1 505466C	AP	Obstructive nephropathy
Bhupen kalita	16	1 505635C	Assam	Unknown
Balmaya	19	2 742626C	Bhutan	Unknown
Manoj Tamang	27	1 291910D	Gangtok	Unknown
Md Abu Raja	26	1 259431D	BD	Unknown
Karabi banerjee	27	2 286526c	WB	Unknown
Debasish pal	20	1 768978c	WB	Unknown
Kinzana Chozom	36	2 312821D	Bhutan	Unknown
Swapan Mondal	30	1 230398D	Assam	Obstructive Nephropathy
Moushmi Chatterjee	23	2 164341c	WB	ANCA vasculities
Umesh	20	1 936347C	Nagpur	Unknown
Debmalya banerjee	20	1 425652c	WB	Crescentic GN
Kuenzang	25	2 309768D	Bhutan	Unknown
Laxmanji	27	1 270387C	Jamshedp	Diabetic nephropathy
Osman ali	48	1 141333c	Banglade	Unknown
Priyanka	15	2 131193C	Jharkhand	Unknown
Lachan deo singh	40	1 636578C	Megalaya	Unknown
Vikash chandrakar	21	1 539534C	Chattisg	Unknown
Vinod J	34	1 504418c	Kerala	IgA nephropathy
Dorji	28	1 250618C	Bhutan	Unknown
Rajkumar	24	1 276756B	Jharkhan	IgA nephropathy
Wanchuck	46	1 402814C	Bhutan	Unknown
Goutam Nag	42	1 310912c	WB	Unknown
Md. kamarazuamman	26	1 386878C	Banglade	Neurogenic bladder
Nagaraj	23	1 349483C	TN	Membranous Nephropathy
Om Prakash mehata	32	1 585101C	Bihar	Unknown
Sam Daniel	23	1 399028C	TN	Unknown
Kakoli banerjee	41	2 621838C	WB	Unknown
Punam kumari	18	2 200545C	Jharkhan	Unknown
Mahadev yadav	55	1 603178C	Jharkhan	Diabetic Nephropathy
Rekha Parvate	32	2 590029C	Nagpur	Unknown
Kanis fatima	22	2 614377B	Banglad	Reflux nephropathy
Sandhiya rani giri	30	2 621631C	Orrisa	Hypertensive nephrosclerosis
Binod kumar srivastava	55	1 778794a	Bihar	Diabetic nephropathy
Vijayan K.	39	1 088151c	Kerala	FSGS
Laljee prasad	43	1 317863C	Manipur	Unknown
John kenedy	28	1 302847C	TN	Unknown
Pankaj kumar	24	1 436368C	Banglade	Chronic calculus pylonephritis
Sohan patel	27	1 433753C	Chattisg	IgA Nephropathy

Roy rupa ghoshal	21	2 436518C	WB	Unknown
Jahera begum	51	2 109325A	TN	IgA nephropathy
Vijalakshmi	17	2 274164C	Mizoram	Mesangioproliferative GN
Suvangshu Kumar	43	1 590102B	WB	Autosomal Polystic Kidney Dise
Souman chal	31	1 261574C	Budwan	Unknown
Jakir hussain	21	1 267794C	Dhaka	Unknown
Swarup dutta choudhry	50	1 542413C	Assan	Diabetic Nephropathy
Pankaj kumar	17	1 252369C	Jharkhan	Unknown
Reta Ghosh	36	2 235539C	Assam	Unknown
Sarojini kumari	19	2 483283B	Jharkhan	IgA nephropathy
Alkaverma	28	2 254868C	Chattisg	Unknown
Babita	34	2 809363C	Manipur	Unknown
Vijay phari	32	1 296444C	Bilaspur	Crescentic GN
Ranganathan	53	1 388879C	TN	Diabetic Nephropathy
Aslam ansari	42	1 543114C	WB	Unknown
Dipankar Ghosh	34	1 540504C	WB	Obstructive uropathy
Lenin V fernandas	54	1 286264C	Kerala	Diabetic nephropathy
Md. Nurul Islam	42	1 674247C	Banglade	Unknown
Archana ghosal	87	2 288820C	WB	Unknown
Bimala Devi	48	2 363360C	Jharkhan	Unknown
Durairajan	43	1 011754C	TN	Unknown
Kuwato	26	1 555360C	Mizoram	Unknown
Md. Zakerhula	25	1 780946C	Bangladesh	Unknown
Mir Mobarak Ali	30	1 789866C	Bangladesh	Unknown
Prakash Baidya	38	1 750298C	w.bengal	Crescentic GN
Raj Kumar Rawani	24	1 750502C	Bihar	Diabetic Nephropathy
Sai2ul Islam	30	1 726123C	w.bengal	Diabetic Nephropathy
Shiva Kumar Rai	52	1 785959C	chattis	Obstructive uropathy
Jyotirani Panda	35	2 765102C	Orrisa	Diabetic nephropathy
Lalnuhliri	38	2 969968C	Mizoram	Unknown
Kulsum	46	1 779929C	chattis	Diabetic Nephropathy
Pranath Paul	42	1 762896C	Assam	Diabetic nephropathy
Labonipati	15	2 937614C	WB	Crescentic GN salitary native
Lal ram ruta	24	1 338954C	Mizoram	Iga nephropathy
Jalina khabin burman	34	2 343239c	Banglade	Unknown
Md. Rafiqul islam	40	1 267622C	banglade	Unknown
Subrato chatterjee	33	1 362894c	WB	Unknown
Moirenthem Lal Gopal	34	1 001610D	Manipur	Systemic Vasculities
Md.Sahjahan choundry	21	1 269357C	Banglade	Unknown
Kruseleekense	61	1 193903C	nagaland	Unknown
Nasimaakter	25	2 283990C	Banglade	Unknown
Mohd Masum	19	1 749468C	Bangladesh	unknown
Yusuf Ali	47	1 339173c	Kerala	Unknown
Abdhur Rehaman	28	1 523721C	Banglade	Unknown
Abdhur Rehaman	28	1 523721C	BD	Unknown
Sukumar M.	59	1 286589B	AP	Diabetic Nephropathy
Seralanathan	52	1 384979c	TN	Unknown
Md.Nur Islam	29	1 287610d	BD	Unknown
Ramendera jha	28	1 653011c	Jharkhan	Obstructive Uropathy
Thumliaha	56	1 298213C	Mizoram	Diabetic nephropathy
Bireesh bhowmick	85	1 156868C	Tripura	Diabetic Nephropathy
Anil Chandeswar	37	1 219201C	Mp	Unknown
Gunasekaran	18	1 223879C	TN	Alports
Bijoy choudhry	27	1 250168C	WB	Unknown
Sandip malakar	17	1 217416c	WB	IgA nephropathy
Jatendera mohapatra	36	1 987146C	Orissa	Obstructive uropathy
S.M.Bharathi	56	1 297667C	Jharkhan	Diabetic Nephropathy
Teerthavashi Pradhan	23	1 626830C	Orrisa	Unknown
Munnai rai	38	1 660873C	Bihar	Unknown
Priyavasanth	17	1 832437C	TN	Unknown
Ranjit singh	20	1 448613C	Manipur	Unknown
Manivachagam	55	1 918903B	TN	Unknown
Abraham	51	1 418870C	patna	Unknown
Ahmed ali	35	1 346808C	TN	Oxalosis
Kanu Debnath	23	1 678639C	WB	Unknown
Mohanank K	51	1 806551B	Kerala	IgA nephropathy
Ranjit rajan	22	1 363298c	Jharkhan	unknown
Satyanaryanan	32	1 405744c	KN	Unknown
Virchandraroy	35	1 438319C	Jharkhan	Unknown
Ajay kumar	31	1 766235C	Jharkhan	Unknown
Chimi	28	1 250952C	Bhutan	Unknown

Tshering Wangmo	37	2 968354c	Bhutan	Unknown
S.M.Bharathi	56	1 297667C	Jharkhan	Diabetic Nephropathy
Asmakaleel	21	2 276802C	Trichy	Obstructive uropathy
Pradeep sam paul	21	1 426905C	TN	Unknown
Prasanjit choundhry	29	1 732071c	WB	IgA nephropathy
Chandrakala	21	2 405645C	Bhutan	Unknown
Lalduati	19	2 268978C	Mizoram	Unknown
Anirban	31	1 393560c	WB	Unknown
Jeyalakshmi	29	2 958579A	Kerala	Unknown
Selian kabay	32	1 371875c	Uganda	Unknown
Vandingliana	60	1 379059C	Mizoram	Diabetic nephropathy
Krishna routh	26	1 291811c	Tripura	Unknown
Dawama V	48	1 886783c	Mizoram	unknown
Madan mohan prasad	56	1 180922C	Jharkhan	Unknown
Md. Rafee Ms	27	1 868376c	AP	IgA nephropathy
Durgashankar das	41	1 767081B	Assam	Unknown
Jiban Debnath	20	1 053878B	WB	Reflux nephropathy
Shahduzzaman	26	1 401847C	Banglade	IgA nephropathy
Suresh kumar	40	1 832439C	Kerala	Unknown
Pankaj Kumar Jha	33	1 937747B	Jharkhand	FSGS
Dorji Gyeltshen	42	1 206784C	Bhutan	Unknown
Vanlalreamluni C.	42	2 934776C	Mizoram	Unknown
Rajesh jaiswal	33	2 801482C	Jharkhand	Unknown
Mou chakraborty	27	2 780879C	WB	Unknown
Satish kumar	38	1 869667c	MP	Unknown
Indirani R	58	2 897856B	TN	Calculous renal disease
Anand C nayak	48	1 647140B	Orrisa	Unknown
Fazul Karim	31	1 874371C	Bangladesh	Unknown
Rajeena	17	2 904754C	Kerala	Unknown
Somnath maji	40	1 996793c	Orissa	Diabetic nephropathy
Jolly bhattacharjee	37	2 161467C	WB	FSGS
Asit Biswas	53	1 130361C	WB	Diabetic Nephropathy
Kovala Gova Sanjeev	25	1 181499D	Jharkhand	Unknown
Yaipha	29	1 032498D	Manipur	Unknown
Manprit Lakra	58	1 985386A	TN	ADPKD
Md. Farhad Hossain	35	1 851996C	Bangladesh	Medullary Nephrocalcinosis
Rahul Kumar Puri	22	1 270347d	Chattisgarh	Unknown
Susanta Kr Pradhan	33	1 459762D	WB	Unknown
Ragothaman	26	1 460295D	AP	MPGN Type I
Rajesh Singh	35	1 434603D	Bihar	Unknown
Md Jellulr Rahman	34	1 230248d	Banbanglades	Unknown
Tinchliang	38	1 165617D	Bhutan	Unknown
Surya Narayan	29	1 115738D	Orrisa	Unknown
Zathanga	57	1 374478D	Mizoram	Unknown
Kumari Rai	44	2 390494D	Jharkhand	Unknown
Senthil Kumar E.	25	1 059337d	TN	CIN
Rita Rani Nayak	50	2 264426D	Orrisa	Unknown
Prafulla Kr Nath	43	1 103507D	BD	Unknown
Vijayakumaran P.	57	1 927480C	Kerala	Unknown
Sabu kuriakose	41	1 217816c	Kerala	FSGS
Satish Raj	23	1 545944C	TN	HSP
Afsal baig	28	1 213650B	TN	IgA nephropahty
Wangdupsherpa	18	1 826141C	Bhutan	Unknown
Mohash kumar bajpai	55	1 211021C	Jharkhan	Diabetic Nephropathy
Vijay Usende	40	1 251621d	Chatitisgarh	Unknown
Sharad Purohit	40	1 903286c	Nagpur	Obstructive Nephropathy
Nisha	20	2 281610c	TN	Reflux Nephropathy
Govind Prasad Dinkar	34	1 826588C	Bihar	Unknown
Lalnunfeli	28	2 408577c	Mizoram	Unknown
Bakthiyasanga	28	1 158395D	Mizoram	Unknown
Rohit kumar	40	1 467259c	Bihar	Mesangio proliferative GN
Md Humayun Kabir	30	1 992294c	Bangladesh	Unknown
Md.Abdul hasant	21	1 421300C	Banglade	Unknown
Abdul Khaleque	34	1 255379C	Banglade	Obstructive uropathy
Md. Shajada salim	44	1 853273C	Bangladesh	unknown
Umesh kumar	33	1 613469C	Patna	Unknown
Kavitasharma	18	2 335548c	Chattisg	Unknown
Lynrah G	46	2 375107C	Meghayal	Unknown
Sangam lekhi	22	1 905118C	Bhutan	unknown
Pillai K.V.M.	54	1 381658D	Kerala	Diabetic Nephropathy
Pema Wangdi	54	1 322404D	Bhutan	Unknown

Samtan Wanchuk	21	1 311361D	Bhutan	Unknown
Montereal Rajak	51	2 312056D	Megalaya	Asteronephrosclerosis
Dorji Dema	21	2 654285D	Bhutan	FSGS
Monika Vilson	34	2 433568D	Jharkhand	Unknown
Calmy Nagtalu	49	2 290928D	Megalaya	Unknown
Rashid Khan	54	1 297691D	BD	Chronic pylonephritis renal Ca
Nikhal Saha	50	1 211568B	WB	Mesangio proliferative
Sandeep kumar updaya	23	1 608457C	Chattisg	Unknown
Arun kumar	40	1 254377C	Patna	Unknown
Shaji Mathew	43	1 870996C	Kerala	Unknown
Hariprasad Bhattacharji	55	1 263830C	WB	Hypertensive Nephropathy
Tapaskumar maji	39	1 467096C	WB	IgA nephropathy
Ajay kumar	22	1 925604C	Varanasi	Unknown
Bhismaraj	32	1 003448D	Nepal	FSGS
Rahul Tripathi	16	1 784896C	Chattisg	Reflux nephropathy
Amerendera Singh	49	1 004055D	Jharkhan	Unknown
Babp roy choudhry	31	1 399806c	WB	Unknown
Goutam karmakar	31	1 269565C	WB	Unknown
Hemant	31	1 954815C	Jharkhand	Unknown
Joy Dev Banerjee	25	1 258695C	WB	ADPKD
Kanyalal Nizhad	36	1 548212C	Chattisg	Unknown
Lukose joseph	37	1 616094C	Kerala	Unknown
Tassto tallu	17	1 306894C	Arunprad	Unknown
Akalya	27	2 272841C	TN	Unknown
Kamirun nahar	22	2 653603C	Bangladesh	Obstructive uropathy
Hossain Md tarrif	1	18 904183B	Banglade	IgA Nephropathy
Dhar bahadur	41	1 029203D	Bhutan	Unknown
Duradh ram	36	1 341984C	Chattisg	ADPKD
Indrajit pathak	53	1 242053C	WB	ADPKD
Sanjay thapa	23	1 281569C	Shilong	Unknown
Ratna Prasad Kamal	36	1 058953c	Assam	Unknown
Srikant prasad	53	1 985415C	Dhanbad	Diabetic Nephropathy
Manish Kr Tappo	31	1 227494d	Jharkhand	Unknown
Md. Golam Rabbani	44	1 251688D	BD	Diabetic Nephropathy
Pranab Ghosh	46	1 315441D	WB	Unknown
Chetan Demar	34	2 547879D	Bhutan	Unknown
Mallick Abid Hussain	46	1 415729C	Bihar	Unknown
Latluangi	44	1 120757D	Mizoram	Unknown
Onasis Samuel	32	1 207036C	TN	Lupus Nephritis
Abdul Kayum	58	1 170581B	Assam	FSGS
Vijaya bahadur	47	1 303666c	Jharkhan	unknown
Bidyadhar sinha	54	1 368236c	Jharkhan	Unknown
Ram Bilas Prasad	30	1 984919B	Jharkhand	Unknown
Shitlal Prasad dubey	18	1 337031C	Dhanbad	Unknown
Renzin dorji	27	1 405644c	Bhutan	Unknown
Ankit singh	17	1 369605C	Chattisg	Unknown
Sunil Noel sing	25	1 351287C	TN	Unknown
Saranya	16	2 377187c	TN	Unknown
Sunita jain	42	2 807926a	WB	FSGS
Ujjwal Ghosh	38	1 891962B	WB	Unknown
Prabhunath Yadav	51	1 188877d	Bihar	Diabetic Nephropathy
Lalnumawi	50	2 139871D	Mizoram	Unknown
C.G.Lakshmi	41	2 307247A	TN	Unknown
Kyaw Aye	25	1 608063C	Mianmar	Unknown
Ebom Zirdo	43	1 893555c	Arunachalpra	Unknown
Druchand verma	38	1 580177C	Chattisg	Unknown
Jaru chandran modi	52	1 316239c	Assam	Diabetic nephropathy
Dayaram	37	1 358821B	Chattisgarh	IgA
Sanjgay rema	20	2 864890C	Arunachal Pr	unknown
Md. abdur Raquib	39	1 418138c	Bangladesh	Unknown
Tarun kumar	26	1 890222c	Jamshedp	Unknown
Edwin	48	1 464536c	TN	Unknown
Pawan Kumar Jaiswal	24	1 234736D	Jharkhand	Unknown
Rajanikantabhoi	30	1 266958D	Orissa	Unknown
Tashi Norbu	23	1 102855d	Bhutan	Unknown
Biplab seal	35	1 500836D	W. Bengal	Unknown
Maznur rahaman	31	1 894131C	Assan	unknown
Manish Saraf	39	1 039141D	Chattisgarh	Unknown
Lairayani Nsingh	48	1 648601C	Manipur	Diabetic nephropathy
Francis K J	50	1 410757D	Kerala	Unknown
Zashichoden	28	2 196448d	Bhutan	Renal calculosis Disease

Chintamani Mitra	50	2 145561C	Jharkhand	Unknown
Dorji	29	1 116484C	Bhutan	Unknown
Oinam N. Singh	53	1 982215C	Manipur	Unknown
Lalit Kr Madak	24	1 101149D	WB	Crescentic Glomeruloneph
Santhosh Hanuman	23	1 154935D	Bihar	Obstructive Nephropathy
Md. Kamaluddin	31	1 800748C	Bangladesh	Unknown
Md. Badiul Alam	31	1 338640C	Banglade	Unknown
Viola niti massey	34	2 327707C	Bihar	Obstructive uropathy
Md.Zakir hussain	34	1 296769c	Banglade	Obstructive uropathy
Durgacharan patel	39	1 148606C	Orissa	IgA nephropathy
Subrata Sarkar	30	1 157939D	WB	Unknown
Krishna bihari singh	56	1 437280C	Jharkhan	Unknown
Abijit Kumar Das	30	1 765206C	w.bengajl	Unknown
Ganesh Kumar	27	1 761506C	bihar	unknown
Harunar Roshid	32	1 710872C	bangladesh	unkniown
Lalan Kumar	54	1 624491C	jharkhand	diabetic nephropathy
Nohro R.C.Rev.	61	1 745107C	mizoram	unknown
Ratan Kanti Khar	50	1 740468C	w.bengal	unknown
Tashi Namgar	21	1 752858C	bhutan	unknown
Sita Devi	45	2 765975C	chattis	unknown
Sunita Pradhan	23	2 621859C	jhankhand	unknown
John Kennedy	28	1 302847C	TN	Unknown
Choki	24	2 156580C	Bhutan	Unknown
Sanjay Kumar Das	43	1 847866C	Bihar	IgA Nephropathy
Dema	41	2 159598D	Bhutan	Unknown
Helal ahmed	26	1 964470C	Bangladesh	Mesangioproliferative GN
Nareshlal Shretha	46	1 612540A	Bhutan	Reflux Nephropathy
Maresh Rai	43	1 424068C	Bihar	Diabetic Nephropathy
Singh RP	21	1 851278C	Chattisg	Unknown
Rout PC	52	2 319126c	jharkhan	Diabetic nephropathy
Haukhangoa	45	1 432760D	Mizoram	Unknown
Jhankar banerjee	22	1 365380c	WB	Crescentic GN
Lalram Dina	32	1 812458C	Mizoram	MPGN
Tshering Tashi	24	1 752859C	bhutan	Unknown
Lalrinawmma	47	1 315714C	Mizoram	Diabetic Nephropathy
Nurul Islam	21	1 895598c	Bangladesh	IgA nephropathy graft
Jasimuddin	26	1 867177C	Bangladesh	Obstructive uropathy
Dilip Kumar Gupta	25	1 219676c	Jharkhand	Unknown
Nirmal Kumar Rai	20	1 739666C	Ranchi	Unknown
hemraj manghate	46	1 938462C	MP	Unknown
Pravesh cheteri	20	1 571737C	Dargeeli	Unknown
Kishore gurung	48	1 931465c	AP	Unknown
Maheshkumar	28	1 319038c	Chattisg	Unknown
Biswajit baig	23	1 500081C	Kolkatta	IgA nephropathy
Mrinlal kanti sarangi	32	1 280837c	Orrissa	Unknown
Chewang gomtar	54	1 343021B	Bhutan	Diabetic nephropathy and FSGS
sarika patwar	27	2 792569C	chattisg	unknown
Sukur sekhi	35	1 780000C	WB	Unknown
Rinzin wangmo	52	2 304218C	Butan	ADPKD
Sandhya Pandey	30	2 451334C	Varanasi	FSGS
Bijoy Prasad	38	1 738274C	Bihar	unknown
Gosta gopal	25	1 022399D	WB	Unknown
Jeyaprakash	56	1 169415D	TN	Unknown
Suman Das	33	1 772053C	WB	Unknown
Md. Soharab Ali	33	1 978766C	Bangladesh	Unknown
Tuhina Saha	24	2 992012A	w.bengal	unknown
Jogesh barla	56	1 672933C	Orissa	Diabetic Nephropathy
Samereesh prasad	48	1 369490c	WB	Unknown
Kavita kumari	23	2 351294C	Jamshedpur	Mesangio proliferative GN
Chandrakanta	44	2 993435C	Chattisg	Unknown
Priyashree prabhakar	14	2 470202c	ranchi	Unknown
Thanchunasailo	43	1 293068C	Mizoram	Unknown
Venkatramana	30	1 948589C	AP	IgA nephropathy
Neichunga T.	59	1 617408C	Mizoram	Unknown
Vanlalthulanga	35	1 006572D	mizoram	Unknown
Bhupan ghoi	26	1 728954c	Assam	unknown
Varughese KP	45	1 419606c	Bihar	Unknown
Ruba	23	2 444829c	TN	Pauci immune crescentic GN
Virchandra Roy	50	1 438319C	Jharkhand	Unknown
Rinchen Wangdi	34	1 802994C	bhutan	unknown
Selvam S.	51	1 090452B	TN	Diabetic Nephropathy

Komala kumar	46	1 258315C	Dhanbad	Unknown
Sailesh pradhan	35	1 814469C	Darjelin	Unknown
Subramani P	33	1 994363C	Madurai	Unknown
Salomi AO	25	2 088896D	nagaland	FSGS
Mominur Raham Azon	16	1 987936c	BD	Unknown
Santosh choubey	31	1 464079C	MP	Unknown
Sangay choden	50	2 123131D	Bhutan	MPGN Type I
Abdul gofur	45	1 568416C	Banglade	Unknown
Azmire Sultana	33	2 134662D	Banglade	Unknown
Sudip chakarborty	38	1 364058c	Bilaspur	Unknown
Akthar Hussain	37	1 328426C	Jharkhan	Unknown
Niraj Kumari Ray	48	2 057093C	Jharkhand	Unknown
Anil kumar gupta	52	1 917947C	Jharkhand	Unknown
Chorten Wangmo	25	2 015055D	Bhutan	Unknown
Md. Zahane alam	35	1 137028D	Banglade	Unknown
Ravindaranath kawat	26	1 307232c	Chattisg	Unknown
Arunachalam	6	1 564696C	TN	Diabetic Nephropathy
Chinnaswamy	42	1 258090C	Kerala	IgA nephropathy
Regina Rane	41	2 271402c	Meghalay	Unknown
Subha kumar	20	1 278737C	Jharkhand	IgA nephropathy
Dr.Ahadal kabir	30	1 405706C	Banglade	Unknown
Hemalatha	24	2 620208B	TN	FSGS
Sageeta zhalem	30	2 423114c	Jamshedp	Unknown
Merakpa	34	1 295704C	Darjeeli	Unknown
Harindar singh	41	1 224669C	Jharkhan	Diabetic Nephropathy
Chandrasekar	34	1 734235C	TN	Unknown
Jayanath Kumar Singha	41	1 728810C	Bihar	IgA nephropathy
Rangarajulu	47	1 512177C	AP	Unknown
Rinchen Dema	23	1 786941C	bhutan	Unknown
Falan Molla	40	1 778036C	bangladesh	Unknown
Murgesan P.	56	1 257420c	TN	Unknown
Ram Gobinda Ganguli	41	1 911128B	w.bengal	unknown
Nim Dorji	25	1 438438D	Bhutan	Unknown
Perumal	32	1 444389c	TN	Unknown
Dr.Md. Mossraj	50	1 247829C	Banglade	Unknown
Theresia merwin	25	2 161893c	Megalaya	Unknown
Arun kumar mishra	49	1 295300C	Bihar	Unknown
Rihunlangr	24	2 499156C	Mizoram	crescentic Gn Acute GBM diseas
Sonam tshering	24	1 575240C	Bhutan	Unknown
Ganesh chandra shutradhar	23	1 486060C	Banglade	Unknown
Major Nm Pradhan	54	1 216846D	Bhutan	Diabetic Nephropathy
Prasantha Mandal	33	1 126214C	WB	Unknown
Chaten Bhuyath	50	1 161827C	Orrisa	Diabetic Nephropathy
Aminul haque biswas	41	1 135542c	WB	Diabetic nephropathy
Ravindera prasad	34	1 302112	Bihar	Unknwn
Suresh Takur	27	1 171714C	Megalaya	Unknown
Joyjit ghosh	27	1 437872C	WB	Unknown
Malsawmsangi	21	2 758168C	mizoram	unknown
Asim kumar saha	43	1 577790C	WB	Diabetic nephropathy
Lalrinliami	30	2 332479D	Mizoram	Unknown
Gokul ramnarayan reddy	27	1 844133C	AP	Unknown
Prayerson Sudip Halder	23	1 144045d	BD	FSGS
Praktish Pradhan	20	1 266800d	WB	Unknown
Peterson Adore Naome	47	2 338460d	Nigeria	FSGS
Kavitha R.	30	2 582431B	TN	IgA Nephropathy
Chanjeev Bhattacharya	35	1 187712D	WB	Unknown
Anzum al amin Niob	12	1 145569C	Banglade	FSGS
Mangal rajbir	50	1 077950B	Jharkhand	ADPKD
Viswanath gope	38	1 262993C	WB	Diabetic Nephropathy
Pavani Lakshmii	22	2 334860C	TN	Unknown
Pretek baisiya	34	1 402032C	Rajestha	FSGS
Jeyanti c	37	2 294137C	TN	Unknown
Nipa Sebastin gomes	24	2 507469c	pondicherry	Unknown
Prasad Rao	34	1 9713186B	Jharkhand	Unknown
Jeba Surjerson	28	1 979641C	TN	Mesangial Proliferative GN
Subir Dey	36	1 394895D	WB	FSGS
Mihir Chandra Kuri	41	1 006157D	BD	Unknown
Zeya Ahmed	39	1 807617c	Jharkhand	Unknown
Subulakshmi	43	2 554462A	TN	MPGN
Chancho Pem	37	2 210860B	Bhutan	IgA Nephropathy
Rakhi Chouhdry	32	2 200508D	WB	FSGS

Lallanzuani	49	2 846938C	Mizoram	IgA nephropathy
Lianzula	50	1 429079c	Mizoram	IgA nephropathy
Irfat rebeka	16	2 422959C	bangladesh	Unknown
Edward George	43	1 525635C	TN	Unknown

DOTX	NOTX	HT	WT BGROUP	CSA	TAC	AZA	MMF	SIRO	EVERO
#####	1	149	39.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 O+	1	.00	.00	1.00	.00	.00
#####	1	9	45.00 B+	1	.00	1.00	.00	.00	.00
#####	1	165	65.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	160	52.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	155	45.00 O+	1	.00	1.00	.00	.00	.00
#####	1	155	66.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	59.00 O+	1	.00	1.00	1.00	.00	.00
#####	1	155	46.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	175	75.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	46.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	58.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	170	66.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	59.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	67.00 A+	1	.00	1.00	.00	.00	.00
#####	1	160	58.00 O+	1	1.00	.00	1.00	.00	.00
#####	1	165	65.00 B-	0	1.00	.00	1.00	.00	.00
#####	1	9	51.00 B+	1	.00	1.00	.00	.00	.00
#####	1	130	25.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	166	60.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	62.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	165	48.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	62.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	62.00 B+	1	.00	1.00	.00	.00	.00
#####	1	152	75.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	64.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	49.00 O+	1	.00	.00	1.00	.00	.00
#####	1	150	50.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	63.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	63.00 B+	1	.00	.00	1.00	.00	.00
#####	1	155	50.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 B+	0	1.00	.00	1.00	1.00	.00
#####	1	9	56.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	160	47.00 O+	0	1.00	1.00	.00	.00	.00
#####	2	9	56.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	183	66.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	155	64.00 A+	0	1.00	.00	1.00	.00	9.00
#####	1	165	59.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	163	47.50 B+	0	1.00	.00	1.00	.00	.00
#####	1	168	57.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	170	62.00 A+	0	1.00	.00	1.00	.00	.00
#####	2	176	72.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	170	70.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	180	66.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	74.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	163	60.00 O-	0	1.00	.00	1.00	.00	.00
#####	1	169	56.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	152	46.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	145	60.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	166	50.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	145	49.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	156	42.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	55.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	90.00 B+	1	.00	.00	1.00	.00	.00
#####	1	9	61.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	168	72.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	164	61.50 A-	0	1.00	.00	1.00	.00	.00
#####	1	169	58.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	117	21.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	162	59.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 A+	0	.00	.00	1.00	1.00	.00
#####	1	9	60.00 AB+	1	.00	.00	1.00	.00	.00
#####	1	170	67.00 A+	0	1.00	.00	1.00	.00	.00

#####	1	153	60.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	170	66.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	145	45.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 O+	1	.00	1.00	.00	.00	.00
#####	1	149	45.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	149	40.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	154	41.50 O+	1	.00	.00	1.00	.00	.00
#####	1	157	51.50 B+	0	1.00	.00	1.00	.00	.00
#####	1	162	45.80 B+	0	1.00	1.00	.00	.00	.00
#####	1	156	53.80 O+	0	1.00	.00	1.00	.00	.00
#####	1	168	54.50 A	0	1.00	.00	1.00	.00	.00
#####	1	150	42.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	65.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	48.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	162	53.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 AB+	1	.00	.00	1.00	.00	.00
#####	1	160	58.00 B+	1	.00	1.00	.00	.00	.00
#####	1	169	52.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	186	83.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	65.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	40.00 O+	1	.00	1.00	.00	.00	.00
#####	1	168	58.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	160	41.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	56.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	50.00 B+	0	1.00	1.00	.00	.00	.00
#####	1	9	46.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	174	68.60 AB	0	1.00	.00	1.00	.00	.00
#####	1	9	68.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 O+	1	.00	1.00	.00	.00	.00
#####	2	153	49.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	52.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	52.00 B+	1	.00	1.00	.00	.00	.00
#####	1	157	46.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	180	68.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	67.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	156	50.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	148	40.00 AB	0	1.00	.00	1.00	.00	.00
#####	1	147	44.40 B+	0	1.00	.00	1.00	.00	.00
#####	1	174	61.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 A+	1	.00	1.00	.00	.00	.00
#####	1	146	42.40 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	50.00 B+	1	.00	1.00	1.00	.00	.00
#####	1	164	60.00 O+	1	.00	1.00	1.00	1.00	.00
#####	1	9	45.00 O+	0	.00	.00	1.00	.00	.00
#####	1	9	69.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	9	54.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 O+	1	.00	.00	1.00	.00	.00
#####	1	9	45.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	39.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	9	62.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	54.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	65.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00 O+	1	1.00	1.00	1.00	.00	.00
#####	1	9	39.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	62.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	54.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	65.00 O+	1	.00	1.00	.00	.00	.00
#####	2	9	65.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	39.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 A+	0	1.00	1.00	.00	.00	.00
#####	1	9	62.00 A+	1	.00	1.00	.00	.00	.00

#####	1	9	54.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 B+	1	.00	1.00	1.00	.00	.00
#####	1	175	74.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	68.00 B+	1	.00	1.00	1.00	.00	.00
#####	1	9	56.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00	1	.00	1.00	.00	.00	.00
#####	1	9	56.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00	1	.00	1.00	.00	.00	.00
#####	1	9	48.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	65.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 O=+	1	.00	1.00	.00	.00	.00
#####	1	172	39.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 A+	1	.00	1.00	.00	.00	.00
#####	1	163	62.00 B+	1	.00	1.00	.00	.00	.00
#####	1	168	54.00 B+	1	.00	1.00	.00	.00	.00
#####	1	145	50.00 B+	1	.00	1.00	.00	.00	.00
#####	1	165	65.00 B+	1	.00	1.00	.00	.00	.00
#####	1	175	65.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	163	45.00 A+	1	.00	1.00	.00	.00	.00
#####	1	145	39.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	60.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	160	62.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	167	54.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	168	65.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	172	65.00 B+	1	.00	1.00	.00	.00	.00
#####	1	165	65.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	177	45.00 A+	1	.00	1.00	.00	.00	.00
#####	1	165	39.00 O+	1	.00	1.00	.00	.00	.00
#####	1	163	60.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	62.00 A+	1	.00	.00	1.00	.00	.00
#####	1	153	54.00 A+	0	1.00	1.00	.00	.00	.00
#####	1	9	65.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	45.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	39.00 O+	1	.00	1.00	.00	.00	.00
#####	1	173	60.00 B+	0	1.00	.00	1.00	.00	.00
#####	9	9	62.00 A+	1	.00	1.00	1.00	.00	.00
#####	1	9	54.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	60.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	160	55.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 O+	1	.00	1.00	.00	.00	.00
#####	1	156	57.00 A+	1	.00	1.00	.00	.00	.00
#####	1	160	56.00 A+	1	.00	1.00	.00	.00	.00
#####	1	163	58.00 AB+	1	.00	.00	1.00	.00	.00
#####	1	160	56.00 O+	1	.00	.00	1.00	.00	.00
#####	1	166	60.50 O-	0	1.00	.00	1.00	.00	.00
#####	1	9	48.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 B+	1	1.00	.00	.00	.00	.00
#####	1	9	45.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	39.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	62.00 A+	1	.00	1.00	.00	.00	.00
#####	1	180	54.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	65.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 A+	1	.00	1.00	.00	.00	.00
#####	9	9	45.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	39.00 O+	1	.00	.00	1.00	.00	.00
#####	1	9	60.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	9	62.00 O+	0	.00	.00	1.00	1.00	.00
#####	1	9	54.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	65.00 B+	1	.00	.00	1.00	.00	.00
#####	1	9	65.00 A2+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	39.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	62.00 AB+	1	.00	1.00	1.00	.00	.00
#####	1	170	54.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	45.00 A+	1	.00	.00	1.00	.00	.00

#####	1	149	39.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 B+	1	.00	1.00	.00	.00	.00
#####	1	156	62.00 A2+	0	1.00	.00	1.00	.00	.00
#####	1	9	54.00 B+	1	.00	.00	.00	1.00	.00
#####	1	9	70.00 B+	0	1.00	1.00	.00	.00	.00
#####	1	9	54.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	74.00 B+	1	.00	1.00	1.00	.00	.00
#####	1	9	51.00 A+	1	.00	1.00	.00	.00	.00
#####	2	146	62.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	46.00 O+	1	.00	.00	1.00	.00	.00
#####	1	9	67.00 O+	1	.00	.00	1.00	.00	.00
#####	1	9	55.00 A+	1	.00	1.00	.00	.00	.00
#####	1	166	74.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	65.00 O+	1	.00	.00	1.00	.00	.00
#####	1	170	60.00 O+	0	1.00	1.00	1.00	.00	.00
#####	1	9	50.00 A2	1	.00	1.00	.00	.00	.00
#####	1	165	37.00 O+	0	1.00	1.00	.00	.00	.00
#####	1	9	45.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	70.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	160	54.00 O-	1	.00	1.00	.00	.00	.00
#####	1	165	74.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	51.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	62.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	149	46.00 A+	0	1.00	1.00	.00	.00	.00
#####	1	9	67.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	145	55.00 O+	0	1.00	.00	1.00	.00	.00
#####	2	173	43.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	175	70.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	162	42.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	50.00 A+	1	.00	1.00	.00	.00	.00
#####	1	160	43.00 A+	1	.00	1.00	.00	.00	.00
#####	1	165	65.00	0	1.00	.00	1.00	.00	.00
#####	1	167	58.50 B+	0	1.00	.00	1.00	.00	.00
#####	1	169	60.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	161	55.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	169	51.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	170	56.00 B+	0	1.00	1.00	.00	1.00	.00
#####	1	179	62.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	154	46.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	168	65.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	53.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	175	63.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	166	61.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	143	53.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	165	65.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	150	53.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	168	65.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	172	67.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	56.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	75.00 A+	1	.00	1.00	.00	.00	.00
#####	1	164	54.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	58.00 A+	0	.00	.00	1.00	1.00	.00
#####	1	166	52.50 AB+	0	1.00	.00	1.00	.00	.00
#####	1	166	71.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	132	29.50 Ab+	0	1.00	.00	1.00	.00	.00
#####	1	162	49.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 A+	1	.00	1.00	.00	.00	.00
#####	1	160	58.50 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 B+	1	.00	1.00	.00	.00	.00
#####	2	175	75.50 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 O+	0	1.00	1.00	.00	.00	.00
#####	1	9	60.00 O+	1	.00	1.00	.00	.00	.00
#####	1	179	85.00 A+	0	1.00	1.00	.00	.00	.00
#####	1	9	65.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	50.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	166	56.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	153	60.00 B+	0	1.00	.00	1.00	.00	.00

#####	1	170	52.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	146	35.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	138	40.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	149	53.00 1+	0	1.00	.00	1.00	.00	.00
#####	1	155	69.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	54.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	45.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	52.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	56.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	52.00 O+	1	.00	1.00	.00	.00	.00
#####	2	9	35.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	40.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	162	61.00 O+	0	1.00	1.00	.00	.00	.00
#####	1	9	45.00 O+	1	1.00	1.00	1.00	.00	.00
#####	1	155	50.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	52.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	35.00 A-	1	.00	1.00	.00	1.00	.00
#####	1	9	40.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	64.00 B-	1	.00	.00	1.00	.00	.00
#####	1	9	50.00 Ab+	1	.00	1.00	1.00	.00	.00
#####	1	9	56.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	60.00 O+	1	.00	.00	1.00	.00	.00
#####	1	185	59.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	163	60.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	168	70.00 AB+	1	.00	1.00	1.00	.00	.00
#####	1	145	50.00 B+	1	.00	1.00	.00	.00	.00
#####	1	160	65.00 A+	1	.00	1.00	.00	.00	.00
#####	1	165	57.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	170	52.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	166	53.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	165	56.00 B+	0	1.00	1.00	.00	.00	.00
#####	1	154	41.00 B+	0	1.00	.00	1.00	.00	.00
#####	2	185	51.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	163	60.50 O+	0	1.00	.00	1.00	.00	.00
#####	1	168	50.00 B+	1	.00	1.00	.00	.00	.00
#####	1	145	61.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	165	67.00 O+	1	.00	1.00	1.00	.00	.00
#####	1	160	56.00 O+	1	.00	1.00	.00	.00	.00
#####	2	175	60.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	163	65.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	168	70.00 O+	1	.00	.00	1.00	.00	.00
#####	1	145	47.00 B+	1	.00	1.00	.00	.00	.00
#####	1	165	67.00 B+	1	.00	1.00	.00	.00	.00
#####	1	160	45.00 O+	1	.00	1.00	1.00	.00	.00
#####	1	167	46.00 O+	0	1.00	1.00	.00	.00	.00
#####	1	168	51.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	160	70.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	172	69.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	165	66.50 O+	0	1.00	.00	1.00	.00	.00
#####	1	172	49.00 O-	1	.00	1.00	.00	.00	.00
#####	1	163	65.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	168	51.00 B+	1	.00	1.00	.00	.00	.00
#####	1	145	50.00 B+	1	.00	1.00	.00	.00	.00
#####	1	160	50.00 B+	1	.00	1.00	.00	.00	.00
#####	1	167	65.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	168	53.00 S+	0	1.00	.00	1.00	.00	.00
#####	1	160	43.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	172	60.00 B+	0	1.00	1.00	.00	.00	.00
#####	1	165	48.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	177	51.50 A+	0	1.00	.00	1.00	.00	.00
#####	1	165	56.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	172	65.00 AB+	0	1.00	1.00	.00	.00	.00
#####	1	153	56.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	185	77.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	163	64.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	168	58.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	145	54.00 B+	0	1.00	.00	1.00	.00	.00

#####	1	165	60.00 O+	1	.00	1.00	.00	.00	.00
#####	1	160	58.00 B+	1	.00	1.00	.00	.00	.00
#####	1	167	54.50 O+	0	1.00	.00	1.00	.00	.00
#####	1	168	55.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	160	50.00 O-	0	1.00	.00	1.00	.00	.00
#####	1	172	77.00 A+	1	.00	1.00	1.00	.00	.00
#####	1	165	64.00 O+	1	.00	.00	1.00	.00	.00
#####	1	177	58.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	165	54.00 B+	1	.00	1.00	.00	.00	.00
#####	1	172	60.00 A+	1	.00	1.00	.00	.00	.00
#####	1	153	58.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	173	54.50 O+	1	.00	1.00	.00	.00	1.00
#####	1	155	55.00 A+	1	.00	1.00	1.00	.00	.00
#####	1	162	50.00 O+	1	.00	.00	1.00	.00	.00
#####	1	166	65.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	169	77.00 B+	1	.00	1.00	.00	.00	.00
#####	1	165	64.00 A+	1	.00	1.00	.00	.00	.00
#####	1	152	58.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	162	54.00 A+	1	.00	1.00	.00	.00	1.00
#####	1	166	60.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	170	58.00 O+	0	1.00	1.00	.00	.00	1.00
#####	1	168	54.50 O+	1	.00	1.00	.00	.00	.00
#####	1	155	55.00 O+	1	.00	.00	1.00	.00	.00
#####	1	172	50.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	153	51.00 A+	1	.00	.00	1.00	.00	.00
#####	1	173	58.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	162	64.00 A+	1	.00	.00	1.00	.00	.00
#####	1	166	50.00 A+	1	.00	1.00	.00	.00	.00
#####	1	169	55.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	159	60.00 O+	1	.00	1.00	.00	.00	.00
#####	1	162	58.40 A+	0	1.00	.00	1.00	.00	.00
#####	1	166	51.00 B+	1	.00	1.00	.00	.00	.00
#####	1	170	58.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	168	64.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	155	50.00 O+	1	.00	.00	1.00	.00	.00
#####	1	170	55.00 A+	1	.00	1.00	.00	.00	.00
#####	1	175	60.00 O+	1	.00	.00	1.00	.00	.00
#####	1	160	50.00 O+	1	.00	1.00	.00	.00	.00
#####	1	170	57.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	172	60.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	165	50.00 A+	1	.00	1.00	.00	.00	.00
#####	1	155	46.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	169	55.00 A+	1	.00	1.00	.00	.00	.00
#####	1	165	50.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	170	58.00 O+	1	.00	1.00	.00	.00	.00
#####	1	175	59.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	160	58.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	166	50.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	170	58.00 A+	1	.00	1.00	.00	.00	.00
#####	1	172	50.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	169	46.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	170	58.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	175	50.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	160	46.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	166	60.00 O+	0	1.00	1.00	1.00	.00	.00
#####	1	170	45.00 O+	1	.00	.00	1.00	.00	.00
#####	1	172	48.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	155	63.00 A+	1	.00	1.00	.00	.00	.00
#####	1	144	50.00 O+	0	1.00	.00	.00	.00	.00
#####	1	155	58.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	169	42.00 A+	0	.00	.00	1.00	1.00	.00
#####	1	165	57.00 O+	1	.00	.00	1.00	.00	.00
#####	1	170	67.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	175	50.00 O+	1	.00	1.00	.00	.00	.00
#####	1	160	50.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	166	53.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	170	56.00 A+	1	.00	1.00	.00	.00	.00
#####	1	172	30.00 B+	1	.00	.00	1.00	.00	.00
#####	1	155	56.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	144	48.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	175	75.00 O+	0	1.00	.00	1.00	.00	.00

#####	1	9	65.00 A+	1	.00	1.00	.00	.00	.00
#####	1	165	56.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	163	75.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	160	43.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	162	46.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	65.00 B+	1	.00	.00	1.00	.00	.00
#####	1	159	53.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	47.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	48.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	9	52.00 O-	1	.00	.00	1.00	.00	.00
#####	1	9	62.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	153	46.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	145	42.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	53.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	60.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	47.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	49.00 O+	0	.00	.00	1.00	.00	.00
#####	1	9	45.00 O+	1	.00	.00	.00	1.00	.00
#####	1	9	52.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	61.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	49.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	49.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	52.00 O+	1	.00	1.00	.00	.00	.00
#####	1	185	61.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	168	49.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	160	45.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	56.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	62.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	165	67.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	63.00 O+	1	.00	.00	1.00	.00	.00
#####	1	165	54.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	9	64.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	52.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	61.00 A+	1	.00	.00	1.00	.00	.00
#####	1	9	49.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	45.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	9	52.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	61.00 B+	1	.00	1.00	.00	.00	.00
#####	1	164	49.00 A+	1	.00	.00	1.00	.00	.00
#####	1	160	45.00 O-	1	.00	1.00	.00	.00	.00
#####	1	160	56.00 A+	1	.00	1.00	.00	.00	.00
#####	1	185	62.00 O+	1	.00	1.00	.00	.00	.00
#####	1	177	67.00 B+	1	.00	1.00	1.00	.00	.00
#####	1	165	63.00 B+	1	1.00	1.00	1.00	.00	.00
#####	1	165	56.00 A+	1	.00	1.00	.00	.00	.00
#####	1	155	48.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	166	60.00 O+	1	.00	1.00	.00	.00	.00
#####	1	144	47.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	170	55.00 B+	1	.00	.00	1.00	.00	.00
#####	1	160	64.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	165	43.50 A+	0	1.00	.00	1.00	.00	.00
#####	1	166	85.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	150	50.00 A+	0	1.00	.00	1.00	.00	.00
#####	1	166	57.00 A+	0	1.00	1.00	.00	.00	.00
#####	1	9	35.00 O+	1	.00	1.00	.00	.00	.00
#####	1	9	57.00 AB+	1	.00	1.00	.00	.00	.00
#####	1	160	35.00 B+	1	.00	1.00	.00	.00	.00
#####	1	172	57.00 A+	1	.00	1.00	.00	.00	.00
#####	1	9	35.00 B+	1	.00	1.00	.00	.00	.00
#####	1	9	57.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	9	35.00 B+	1	.00	1.00	.00	.00	.00
#####	1	165	64.00 O-	0	.00	.00	1.00	.00	.00
#####	1	170	66.00 B+	0	1.00	1.00	.00	.00	.00
#####	1	155	54.00 O+	0	1.00	.00	1.00	.00	.00
#####	1	164	59.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	178	53.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	154	70.00 B+	0	1.00	.00	1.00	.00	.00
#####	1	150	46.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	162	46.00 A+	0	1.00	.00	1.00	.00	.00

#####	1	152	50.00 AB+	0	1.00	.00	1.00	.00	.00
#####	1	144	65.00 O+	1	.00	.00	1.00	.00	.00
#####	1	165	50.00 O+	1	.00	1.00	.00	.00	.00
#####	1	165	65.00 A+	1	.00	.00	1.00	.00	.00

1.00	1.00	1.00	#####	1.00	.00	1	.00	.00	.00	0
1.00	2.00	.00	#####	1.00	.00	1	.00	.00	.00	0
1.00	2.00	.00	#####	1.00	.00	1	.00	.00	.00	0
9.00	9.00	1.00	#####	1.00	3.00	1	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	2.00	1.00	#####	1.00	.00	2	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	.00	2	2.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	1.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	2	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	3.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	4.00	2	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	3	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	.00	3	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	3	.00	.00	.00	0
1.00	2.00	1.00	#####	1.00	.00	3	.00	.00	.00	0
1.00	2.00	1.00	#####	1.00	.00	3	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	3	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	3	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	2.00	3	.00	.00	.00	0
1.00	2.00	.00	#####	1.00	2.00	3	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	4	.00	.00	.00	1
1.00	1.00	1.00	#####	1.00	2.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	3.00	4	.00	.00	.00	0
1.00	2.00	.00	#####	1.00	6.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	5	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	6	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	6	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	6	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	1.00	6	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	7	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	8	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	3.00	8	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	10	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	11	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	12	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	15	.00	.00	.00	0
.00	.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	1	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	.00	9	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	9	.00	.00		

1.00	.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
1.00	1.00	.00	#####	1.00	.00	0	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	1.00	0	2.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	1.00	0	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	0	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	1	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	1	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	3.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	3	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	3	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	3	.00	.00	.00	0
1.00	.00	.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	6.00	6	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	10	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	2.00	13	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	10	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	3.00	2	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	3	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	3	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	3	.00	.00	.00	0
1.00	.00	.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	6	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	0	2.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	1	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	1	.00	.00	.00	1
1.00	1.00	1.00	#####	1.00	.00	4	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	9	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	1.00	9	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	6	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	.00	35	2.00	1.00	1.00	1
1.00	1.00	1.00	#####	1.00	9.00	9	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	3.00	0	.00	.00	.00	0
.00	.00	1.00	#####	1.00	.00	1	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	3	2.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	9	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	9	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
1.00	2.00	.00	#####	1.00	.00	0	.00	.00	.00	1
1.00	2.00	.00	#####	1.00	.00	0	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	.00	0	.00	.00	.00	0

[illegible]

[illegible]

1.00	.00	1.00	#####	1.00	.00	7	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	8	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	8	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	8	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	8	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	12	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	3.00	15	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	18	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	2.00	5	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	0	.00	.00	.00	1
.00	.00	1.00	#####	1.00	4.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	12	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	3.00	15	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	18	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	5	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
.00	.00	1.00	#####	1.00	4.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	12	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	3.00	15	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	18	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	5	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
.00	.00	1.00	#####	1.00	4.00	2	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	0	.00	.00	.00	0
.00	.00	1.00	#####	1.00	4.00	2	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	1.00	9	.00	.00	.00	0
.00	1.00	1.00	#####	1.00	.00	1	.00	.00	.00	1
1.00	1.00	1.00	#####	1.00	1.00	1	.00	.00	.00	1
1.00	1.00	1.00	#####	1.00	3.00	11	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	.00	2	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	3.00	0	.00	.00	.00	1
1.00	.00	1.00	#####	1.00	3.00	0	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	1	9.00	9.00	9.00	1
1.00	.00	1.00	#####	1.00	.00	2	2.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	2.00	6	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	9	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	9	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	9	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	0	2.00	.00	.00	0
1.00	.00	1.00	#####	1.00	2.00	1	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	4	2.00	.00	2.00	0
1.00	.00	1.00	#####	1.00	.00	8	.00	.00	.00	0
1.00	1.00	1.00	#####	1.00	.00	5	.00	.00	2.00	0
1.00	.00	1.00	#####	1.00	.00	11	.00	.00	.00	0
1.00	.00	1.00	#####	1.00	.00	4	.00			

1.00	.00	1.00	#####	.00	.00	2	2.00	.00	.00	0
1.00	1.00	1.00	#####	.00	.00	0	.00	.00	.00	1
1.00	.00	1.00	#####	.00	.00	0	.00	.00	.00	0
1.00	1.00	1.00	#####	.00	.00	9	.00	.00	.00	0

PHBVPC_R	PREANTHB	PREHCVAB	PRHCVPCR	DM	UTI	TB DONORNAM	DOHOSPNO
0	0	0	.00	.00	.00	.00 Cadaver	
0	0	1	2.00	.00	.00	.00 Dhaneswari knownar	807250C
2	0	0	2.00	.00	.00	.00 Mogibur	364503c
0	0	0	2.00	.00	.00	.00 Sangeetha	507523C
0	0	0	.00	.00	.00	.00 cadaver	
2	0	0	2.00	.00	.00	.00 Vanalruata	420463c
2	0	0	2.00	.00	.00	.00 Khaidem doya	860599c
2	9	0	2.00	.00	.00	.00 Ferdinand basan	226002C
2	0	0	2.00	.00	1.00	.00 Shyam sunder rajak	979900c
2	1	0	.00	1.00	.00	1.00 Cadaver	
2	0	0	2.00	.00	.00	.00 cadaver	
2	1	0	2.00	1.00	1.00	.00 Janarthan	226534C
2	9	0	2.00	.00	.00	.00 Samir mukherjee	834149C
2	0	0	2.00	.00	.00	.00 Syeda mahuda	852695C
2	9	0	2.00	.00	.00	.00 cadaver	
0	0	0	2.00	.00	.00	.00 Roop Rani Devi	296896C
2	0	0	2.00	.00	.00	.00 Md.Asraf Ali	793293C
2	0	0	2.00	1.00	.00	.00 Rebecca marylin	856547C
2	1	0	2.00	.00	.00	.00 Nagiliani	465086C
2	0	0	2.00	.00	.00	.00 Susihema	046667D
2	0	0	.00	.00	.00	.00 Aparajita kundu	006424D
2	1	0	.00	.00	.00	.00 Yashi wangdi	079686D
2	1	0	.00	.00	.00	1.00 Chandan banik	022909D
2	1	0	2.00	.00	.00	.00 Neerasoni	643181C
2	1	0	2.00	.00	.00	.00 Kirti bhusham karmakr	728435C
2	9	0	2.00	.00	.00	.00 Javed salim	581588c
2	0	0	2.00	.00	1.00	.00 Beejain bee	893106C
2	0	0	2.00	.00	.00	.00 Renu bala sarkar	415782c
2	0	0	2.00	.00	.00	.00 Sarojini P	962391C
2	0	0	2.00	.00	.00	.00 Mamsia	566657C
2	1	0	2.00	.00	.00	.00 Kencho dorji	423783C
2	0	0	2.00	.00	.00	.00 Prabitha pakurel	886561c
2	0	0	2.00	.00	.00	.00 sOVA RANI	427487c
0	9	0	2.00	1.00	.00	.00 cadaver	
2	0	0	2.00	.00	.00	.00 Cadaver	
2	9	0	2.00	1.00	.00	.00 Arti singha	820917C
2	9	0	2.00	1.00	.00	.00 Sangay wangmo	983623C
2	0	0	2.00	1.00	.00	.00 Durisagpuia	860079C
2	0	0	2.00	.00	.00	1.00 Nurul islam	012996D
0	1	0	2.00	.00	.00	1.00 Hemalatha	976851C
2	0	0	.00	.00	.00	.00 Tex narayan thakur	002061D
0	0	0	.00	1.00	.00	.00 Meenakshi	165423A
0	0	0	.00	.00	.00	.00 Gayather dhubar	406464D
0	0	0	.00	.00	.00	.00 Ahsok kr soni	393206D
0	0	0	.00	.00	1.00	.00 Pichai r	717173B
0	1	0	.00	.00	.00	.00 Samilata dev	245505D
0	0	0	.00	.00	.00	1.00 Ratna D	453206D
0	0	0	.00	.00	.00	.00 Devakumari Devi	510751D
0	0	0	.00	.00	.00	.00 ANPillai	363927D
0	0	0	.00	.00	.00	.00 Sangay	388993D
0	1	0	.00	1.00	.00	.00 Teswang dhargy	373928D
0	1	0	.00	1.00	.00	.00 Labsang	313853d
0	0	0	.00	1.00	2.00	2.00 Byatrishra	315281d
0	0	0	.00	.00	.00	.00 Paul Raj V.	231138D
0	0	0	.00	.00	.00	.00 Cadaver	
0	0	0	.00	.00	1.00	.00 Cadaver	
0	0	0	.00	1.00	1.00	.00 Cadavr	
0	1	0	.00	.00	.00	.00 Cadaver	
2	0	0	2.00	.00	.00	.00 Uma maheswari	358097B
2	1	0	2.00	.00	.00	.00 Anand banaikl	438607C
2	9	0	2.00	.00	.00	.00 Banti bhuyan	810431C
0	2	0	.00	1.00	.00	.00 Lalthangi	306456d
0	0	0	.00	.00	.00	.00 Alice	354369D
0	0	0	.00	2.00	2.00	2.00 Pema Wangdi	290557D
0	0	0	.00	.00	1.00	.00 Sangeylugthan	203793D
0	1	0	.00	.00	.00	.00 Nimawagdi	262705D
2	0	0	2.00	.00	.00	.00 Gondhaswari deuri	855200C
2	0	0	2.00	.00	.00	1.00 Mahalakshmi	566907C
0	1	0	2.00	.00	.00	.00 Dorji Dhandyn	978130c
0	0	0	2.00	.00	.00	1.00 Deyatha	430945D

0	0	0	.00	.00	.00	1.00	Traniwangdi	399587D
0	0	0	.00	.00	.00	.00	Cadaver	
0	0	0	.00	.00	.00	.00	cadaver	
2	0	0	2.00	.00	.00	.00	Nagavanshi	374511c
2	0	0	2.00	.00	.00	.00	Nasima akthar	419339c
2	0	0	2.00	.00	.00	.00	Pratima dutta	976457C
2	0	0	2.00	.00	1.00	.00	Soangpuui	978671c
2	1	1	1.00	.00	.00	.00	Abu badar sidque	955952C
0	2	0	.00	.00	.00	.00	Shiru Akter	
0	0	0	.00	.00	.00	.00	Christy rosalni	058638D
0	0	0	.00	1.00	.00	.00	Karna bahadur	071506D
0	0	0	.00	.00	1.00	.00	Sneha dutta	235350D
0	0	0	.00	.00	1.00	.00	Bal Bahadur	307717D
2	0	0	2.00	.00	.00	.00	Anima ghosh	828954C
2	9	0	2.00	.00	.00	.00	Akhilesh prasad	827396C
2	0	0	2.00	.00	.00	.00	Savitri bala	988571c
1	9	0	2.00	.00	.00	.00	Kumari stella	880273c
2	0	0	.00	.00	1.00	.00	Bharat munidevi	571281C
0	0	0	.00	.00	.00	.00	Anidita dey	5717720D
0	0	0	.00	.00	.00	.00	Kalaiselvi	973656C
0	1	0	.00	.00	.00	.00	Robmignthapa	203774D
2	1	0	2.00	.00	.00	.00	Zaradevi	555022C
2	0	0	2.00	.00	.00	.00	Ratna	671879C
0	1	0	.00	.00	.00	.00	Yageinyongam	411026D
0	0	0	.00	.00	.00	.00	Cadaver	
2	1	0	2.00	.00	.00	.00	Janushree choundhry	393231C
2	0	0	2.00	.00	.00	.00	Lalghkliani	747437C
2	1	0	2.00	.00	.00	.00	Sibani dutta	010973d
2	0	0	2.00	.00	.00	.00	Kapthiangi	885380c
0	1	0	.00	.00	.00	.00	Pema namgay	496035D
2	0	0	2.00	.00	.00	.00	Usha singh	953239C
2	1	0	2.00	.00	.00	.00	Aycha khatoon	401185c
0	0	0	.00	.00	1.00	.00	Cadaver	
2	0	0	.00	.00	.00	.00	Bedma kalita	506903c
2	0	0	2.00	.00	.00	.00	Dilmaya dahal	744007C
0	0	0	.00	.00	.00	.00	Gorey Tamang	336765D
0	0	0	.00	.00	.00	1.00	RufudaBegum	259431D
2	0	0	2.00	.00	.00	.00	Sanjay banik	320278c
2	0	0	2.00	.00	.00	.00	Anjali pal	924192c
0	0	0	.00	.00	.00	.00	Zigmay	313813D
0	0	0	.00	.00	.00	.00	Rita mondal	238398D
0	0	0	.00	.00	.00	.00	Manoji chatterjee	164342C
2	0	0	2.00	.00	.00	.00	kalash khree	937687C
2	0	0	2.00	.00	.00	.00	Jhama banerjee	461983C
0	1	0	.00	.00	.00	.00	Jashiphenjor	346036D
2	1	0	2.00	.00	.00	1.00	Manjudevi	276220C
1	9	0	2.00	.00	.00	.00	Khadizakhatoon	295606C
2	0	0	2.00	.00	.00	.00	Cadaver	
2	0	0	2.00	.00	.00	.00	Raj kumari singh	645641C
2	0	0	2.00	.00	.00	.00	Rukmani chandrakar	641225C
2	0	0	2.00	.00	.00	.00	Sumangala	567698C
2	0	0	2.00	.00	.00	1.00	Dorji Dema	250625C
2	0	0	2.00	.00	.00	.00	Leela Devi	391450c
2	0	0	2.00	.00	.00	.00	Karma tashi	438099c
2	0	0	2.00	.00	.00	.00	Kathrik chandra	310916c
2	0	0	2.00	.00	.00	.00	Sahara khatton	448448C
2	0	0	2.00	.00	.00	.00	Santhi	581334C
2	0	0	2.00	.00	.00	1.00	Senji devi	597035C
2	0	0	2.00	.00	.00	.00	Duky juhani	402365C
2	0	0	2.00	.00	.00	.00	Suderlalbanerjee	683798C
2	0	0	2.00	.00	1.00	.00	Kanti Devi	269990C
2	0	0	2.00	1.00	.00	.00	Sona Devi	604540C
2	0	0	2.00	.00	.00	.00	Manoj	592383C
2	1	0	2.00	.00	.00	.00	Luckykhatoon	453935C
2	0	0	2.00	.00	.00	.00	Snehalata jana	625720C
2	0	0	2.00	.00	.00	.00	Cadaver	
2	0	0	2.00	.00	.00	.00	Saradha	36686c
2	0	0	2.00	.00	.00	.00	Cadaver	
2	0	0	2.00	.00	.00	.00	Sellammal	307316C
2	1	0	2.00	.00	.00	.00	Naresh kumar	438509C
2	0	0	2.00	.00	.00	.00	Mohan patel	443857C

2	0	0	2.00	.00	.00	.00 Chmimoyghoshal	437590C
2	0	0	2.00	1.00	.00	.00 Cadaver	
2	0	0	2.00	.00	1.00	.00 Basanti devi	281758C
0	0	0	.00	.00	.00	1.00 Nabomita	351707C
2	0	0	2.00	.00	.00	.00 Manishi chal	303585C
2	0	0	2.00	.00	.00	.00 Jopora Aziz	279048C
2	0	0	2.00	.00	.00	.00 Nivedita dutta choundhry	542413C
2	1	0	2.00	.00	.00	.00 Shanti devi	253930C
2	0	0	2.00	.00	.00	.00 Minuranighosh	266972C
2	0	0	2.00	.00	.00	.00 Padmini das	635711C
2	0	0	2.00	.00	.00	.00 Chandrika Nayak	258170C
2	9	0	2.00	.00	.00	.00 Khoibi devi	813267C
2	0	0	2.00	.00	.00	.00 Sangay pahari	435667C
2	0	0	2.00	1.00	1.00	.00 Cadaver	
2	0	0	2.00	.00	.00	.00 Shahida akbar	544760C
2	0	0	2.00	.00	.00	.00 Sarathi ghosh	588395C
2	0	0	2.00	1.00	.00	.00 Merie fernandas	210590C
2	0	0	2.00	.00	.00	.00 Md. Zahadull islam	676426C
2	0	0	2.00	.00	.00	.00 Aparna chakraborty	317112C
2	0	0	2.00	.00	.00	.00 Naryana prasad	380800c
2	0	0	2.00	.00	.00	.00 Basanti devi	193261D
2	1	0	2.00	.00	.00	.00 Manishi chal	357692c
2	1	0	2.00	.00	.00	.00 Mir Mubarak	778670c
2	0	0	2.00	.00	.00	.00 Abdullah	767870c
2	0	0	2.00	.00	.00	.00 Matilal debnath	269990C
2	0	0	2.00	.00	.00	.00 Thangachan	604540C
2	0	0	2.00	.00	.00	.00 Lalan prasad singh	414700C
2	9	0	2.00	1.00	.00	.00 BC Thamnaiah	453935C
2	1	0	2.00	.00	.00	.00 Babita roy	625720C
2	0	0	2.00	1.00	.00	.00 Philip	459962D
2	0	0	2.00	.00	.00	.00 joseph	105057D
1	1	0	2.00	1.00	.00	.00 Ajoy paul	762896C
2	0	0	2.00	.00	.00	.00 pravati pati	942752c
2	9	1	1.00	.00	.00	.00 Hemangaihzuai	341092C
2	0	1	2.00	.00	.00	1.00 Md. ulla AMS	344992c
2	0	1	2.00	.00	.00	.00 rahima Khatun	270458c
2	1	1	2.00	.00	.00	.00 Sina seal	394895c
0	1	1	1.00	.00	.00	.00 Pritambdisingh	193261D
2	0	1	.00	.00	.00	.00 Hosna ara begum	270028C
2	0	1	1.00	.00	.00	.00 Khewenuokense	357692c
2	0	0	2.00	.00	.00	.00 Md. Amzad hossain	285808C
2	0	0	2.00	.00	.00	.00 cadaver	
2	1	1	1.00	.00	.00	.00 Md. kulty	347366c
2	9	0	2.00	.00	.00	.00 Belkin nahar	569146C
2	2	0	2.00	.00	.00	.00 Bilkismadan	569146C
1	1	0	2.00	1.00	.00	.00 Cadaver	
0	1	0	.00	.00	1.00	.00 Cadaver	
0	0	0	.00	.00	.00	.00 Md.Sahidul Islam	324240D
1	9	0	2.00	.00	.00	.00 Prathiba Devi	666909C
2	0	0	2.00	1.00	.00	.00 Lalmunpui	344582C
2	0	0	2.00	1.00	.00	.00 Chandrasekar	208176C
2	0	0	2.00	.00	.00	.00 Nand lal choudhry	220722C
2	0	0	2.00	.00	.00	.00 cadaver	
2	0	0	2.00	.00	.00	.00 Kalavathy choundhry	262911C
2	0	0	2.00	.00	.00	.00 cadaver	
2	0	0	2.00	.00	1.00	.00 Bhanupriya mahstro	997892c
2	0	0	2.00	1.00	.00	.00 Majula bharati	301073C
2	0	0	2.00	.00	.00	.00 Harpriya pradhan	631191C
2	0	0	2.00	.00	.00	.00 Amana khatoon	684078C
2	0	0	2.00	.00	.00	.00 Thajka linda	845433C
2	0	0	2.00	.00	.00	.00 Yeng khom pramodbi	466869c
2	9	0	2.00	.00	.00	.00 Shanti	436924C
2	0	0	2.00	.00	.00	.00 Mariamma	471135c
2	0	0	2.00	.00	.00	.00 nabisa	369594c
2	0	0	2.00	.00	.00	.00 Matilal debnath	683829C
2	0	0	2.00	.00	.00	.00 Thangachan	627376C
2	0	0	2.00	.00	.00	.00 Lalan prasad singh	389489c
2	0	0	2.00	.00	.00	.00 BC Thamnaiah	409303c
2	0	0	2.00	.00	.00	.00 Babita roy	452791C
2	0	0	2.00	.00	.00	1.00 Cadaver	
2	0	0	2.00	.00	.00	.00 Cadaver	

2	0	0	2.00	.00	.00	1.00	Tshering dorji	983622c
2	9	0	.00	1.00	.00	.00	Majula bharati	301073C
2	0	0	.00	.00	1.00	.00	Dhoulten kaleel	004847D
2	1	0	2.00	.00	.00	.00	nagarajan	428599c
2	0	0	2.00	.00	.00	1.00	Bhagabati choudhry	737628c
2	1	0	2.00	.00	.00	.00	Kiranghaly	523224C
0	1	0	2.00	.00	.00	.00	Lalrami	270512C
2	0	0	2.00	.00	.00	.00	Anmaya prakash guha	405643C
2	0	0	2.00	.00	.00	.00	Anil Kumar	591485C
2	9	1	1.00	.00	.00	1.00	Kasande goriet	374549C
2	0	1	2.00	1.00	.00	.00	cadaver	
2	0	0	2.00	.00	.00	.00	sabita rout	294420c
2	0	0	2.00	.00	.00	.00	Auompuui	889557C
2	0	0	2.00	.00	.00	.00	kusum devi	315078c
2	9	0	2.00	.00	.00	.00	Ibrahim	876780C
2	0	0	2.00	.00	.00	.00	Arupkumardas	264474C
2	0	0	2.00	.00	.00	.00	Gitanath	977952c
2	0	0	2.00	.00	.00	.00	Sahanea	455672C
2	0	0	2.00	.00	.00	.00	Karthiyani lm	844812c
2	0	0	2.00	.00	.00	.00	Anitha Devi	966445B
2	1	0	2.00	.00	1.00	.00	Phuntoso	208476C
2	0	0	2.00	.00	.00	.00	Lalramchuana	944151C
2	0	0	2.00	.00	.00	.00	Shakuntala devi	812904c
2	0	0	2.00	.00	.00	.00	ODipankar C	984750c
2	0	0	2.00	1.00	.00	.00	cadaver	
2	0	0	2.00	.00	.00	.00	Cadaver	
2	0	0	2.00	.00	.00	1.00	Basant nayak	983641c
2	0	0	2.00	.00	.00	.00	Md.Mahatab karim	986763C
2	0	0	2.00	.00	.00	.00	Varghesee p thomas	909348C
2	0	0	2.00	.00	.00	.00	Deepta mayee	010948d
0	0	0	2.00	.00	.00	.00	Kalipada ken	427338C
2	0	0	2.00	.00	.00	.00	Jayantibiswas	133870C
0	0	0	.00	.00	.00	.00	Maleswshware	182913D
0	0	0	.00	.00	.00	.00	Bisheswari	089252D
0	0	0	.00	.00	.00	.00	cadaver	
0	0	0	.00	.00	.00	.00	Md.Abdur Razaaque	319496D
0	0	0	.00	3.00	3.00	3.00	Pritla goswami	418204D
0	0	0	.00	.00	.00	.00	Kalyani pradhan	459962D
0	0	0	.00	.00	.00	.00	Ratna singh	473704D
0	0	0	.00	.00	.00	.00	Shanthi Devi	439954D
0	0	0	.00	.00	.00	.00	Selvia Akter	235032D
0	0	0	.00	.00	.00	.00	Chanceu	167130D
0	0	0	.00	.00	.00	.00	Satyanarayan	122852D
0	1	0	.00	.00	.00	.00	Salemi	331170D
0	0	0	.00	.00	.00	1.00	Kerob Rai	431445D
0	0	0	.00	.00	1.00	1.00	Cadaver	
0	1	0	.00	.00	.00	.00	cadaver	
0	1	0	.00	.00	.00	.00	Dipu Rani	256545D
0	0	0	.00	.00	.00	1.00	Sreelatha	928935C
2	0	0	2.00	.00	.00	.00	Susama baby	334981c
2	9	0	2.00	.00	.00	.00	Suresh kangarj	822333B
2	1	0	2.00	.00	.00	.00	Suriyajain	643204C
2	0	0	2.00	.00	.00	.00	Domasherpa	985816C
2	0	0	2.00	.00	.00	.00	Meena bajpai	377032B
0	0	0	.00	.00	.00	1.00	Aswini usendi	369925D
0	0	0	.00	.00	1.00	.00	Vijayalakshmi	903286c
0	0	0	.00	.00	1.00	.00	Gowri	251790D
2	9	0	2.00	.00	.00	.00	Lakshman prasad	827141C
2	1	0	2.00	.00	.00	.00	Lalrualciana	425936c
0	0	0	.00	.00	.00	.00	Routhami	158395D
2	1	0	2.00	.00	.00	.00	Bhudlal coray	476133c
0	0	0	.00	.00	.00	1.00	Golam Hossain	992294C
2	0	0	2.00	.00	.00	.00	Sazeda begum	428130C
2	9	0	2.00	.00	.00	.00	Abdul karim	256333C
2	0	0	2.00	.00	.00	.00	Md.Shabriar	855664c
2	0	0	2.00	.00	.00	.00	Karuna kumari	630236C
2	1	0	2.00	.00	.00	.00	sathya hhowma	351737c
2	0	0	2.00	.00	.00	.00	Buhalin G	390010C
0	1	0	.00	.00	.00	.00	Sangay rinchen	934047c
0	0	0	.00	1.00	.00	.00	Rema pillai	438063D
0	0	0	.00	.00	1.00	1.00	Jigmi wangz	344587D

0	0	0	.00	.00	.00	.00 Ugyen	313493d
0	1	0	.00	.00	1.00	.00 Sawat Fair	506103D
0	0	0	.00	.00	1.00	1.00 Dorji Dipka	570341D
0	0	0	.00	.00	.00	.00 Dhanb devi	441671D
0	0	0	.00	.00	.00	.00 Lohit roy	293532D
2	1	0	.00	.00	.00	.00 Mebeen khan	329403D
2	0	0	2.00	.00	.00	.00 Aprnasaha	307454C
2	0	0	2.00	.00	.00	.00 Namharamlal upadhya	611729c
2	0	0	2.00	.00	.00	.00 Cadaver	
2	9	0	2.00	.00	.00	.00 Mary shaji	881835C
2	0	0	2.00	1.00	.00	1.00 Joly chatterjee	268680C
2	0	0	2.00	.00	.00	.00 Chayaghosh	435179c
2	0	0	2.00	.00	1.00	.00 Maya devi	930378C
2	0	0	2.00	.00	.00	.00 Yamkumari L	026019D
2	9	0	2.00	.00	1.00	.00 Ajay kr. tripati	802096C
2	0	0	2.00	.00	.00	.00 Prmav kumar sinha	030549D
2	0	0	2.00	.00	.00	.00 Manju roy choudhry	426007C
2	0	0	2.00	.00	.00	.00 Ganesh ch.kumar	271142C
2	0	0	2.00	.00	.00	.00 Usha devi	963254C
2	9	0	2.00	.00	.00	.00 Sukukar Banerjee	272899C
2	0	0	2.00	.00	.00	.00 Nishad AR	549461c
2	9	0	2.00	.00	.00	.00 James joseph	621673C
2	0	0	2.00	.00	.00	1.00 Tassu oniya	312830c
2	0	0	2.00	.00	.00	.00 Alamelu	335423c
2	1	0	2.00	.00	1.00	.00 Farida begum	710040C
2	1	0	2.00	.00	.00	.00 Hossain md rajib	343191C
2	0	0	2.00	.00	.00	.00 Mon	031788d
2	0	0	2.00	.00	.00	.00 Gayathiri	628803c
2	1	0	.00	.00	.00	.00 Biswajit pathak	299867C
2	0	0	.00	.00	.00	.00 Anupama jana	455996c
1	0	0	.00	.00	1.00	.00 Ratna prasad kamal	058953C
0	0	0	.00	1.00	.00	.00 Ramkant prasad	098865D
0	1	0	.00	.00	.00	.00 Noel Tappo	240201D
0	0	0	.00	1.00	.00	.00 Juulakha khatton	314588d
0	0	0	.00	.00	1.00	.00 Lipikaghosh	320963d
0	0	0	.00	.00	1.00	.00 Karma	550006D
0	1	0	.00	.00	.00	.00 Cadaver	
0	0	0	.00	.00	.00	.00 Laldhulaha	233545D
2	0	0	2.00	.00	.00	.00 Cadaver	
2	0	0	2.00	.00	.00	.00 Abdul Baten	630391C
2	0	0	2.00	.00	.00	.00 Manoj kr singh	327014c
2	0	0	2.00	.00	.00	.00 Gulabi devi	380871c
0	0	0	.00	.00	1.00	.00 Cadaver	
2	0	0	2.00	.00	.00	.00 Kailash devi	338248C
2	1	0	2.00	.00	.00	1.00 Sonam zagdo	405807c
2	0	0	2.00	.00	.00	.00 Haridhar chattri	371048c
2	0	0	2.00	.00	.00	.00 Vasanta	356314C
2	0	0	2.00	.00	.00	.00 Devarajan v	383658c
2	0	0	2.00	.00	.00	.00 Kavi kumar	484700c
0	0	0	2.00	.00	.00	.00 Shubendu	230628D
0	0	0	.00	1.00	1.00	.00 Bindu Devi	393556D
0	1	0	.00	.00	.00	.00 Lalimpuii	167081D
0	0	0	.00	.00	.00	.00 Govindaraj	378673B
2	1	0	2.00	.00	.00	.00 Daw sakinar khatun	617100C
2	0	0	2.00	.00	.00	.00 Itozirdo	900876c
2	0	0	2.00	.00	.00	.00 Mowati devi	582026c
2	0	0	2.00	1.00	1.00	.00 Bhanumai modi	320067c
2	1	0	2.00	.00	.00	.00 UmaDevi	182371C
2	0	0	2.00	.00	.00	.00 Karma	891006C
2	0	0	2.00	.00	.00	.00 Abdur rashid	021228D
2	0	0	2.00	.00	.00	1.00 Sumanta devi	951540c
2	0	0	.00	.00	.00	1.00 Stella sukumar	486022C
0	1	0	.00	.00	.00	.00 Ramsai Jaiswal	236336D
0	1	0	.00	.00	.00	1.00 debashis kr boi	270246d
0	1	0	.00	.00	.00	.00 Phubandorji	102855D
2	0	0	2.00	.00	.00	.00 Prbitra kr seal	514078c
2	9	0	2.00	.00	.00	.00 Cadaver	
2	0	0	.00	.00	.00	.00 Chakndrakala saraf	828910B
0	1	0	.00	1.00	1.00	.00 Krishan nand ranidevi	983328C
0	0	0	.00	.00	.00	.00 Lissy Francis	412568D
0	0	0	.00	.00	1.00	.00 tsering wanchuk	204371D

2	0	0	.00	.00	.00	.00	Udayakumar	158000C
2	0	0	2.00	.00	.00	.00	Pema	120004C
0	1	0	.00	.00	1.00	1.00	Berudini	021883D
0	0	0	.00	.00	.00	.00	Joaomati devi	247580d
0	0	0	.00	.00	1.00	.00	Bijaibai	218439D
2	9	1	1.00	.00	.00	.00	Afsaruddin	916050c
2	9	1	.00	.00	.00	.00	Salima akthar	338641C
2	0	0	2.00	.00	1.00	.00	Susan massery	472034C
2	9	0	2.00	.00	.00	.00	Shadhia sultana	297364c
2	9	0	2.00	.00	.00	.00	Jkeswari patel	322140c
0	2	0	2.00	.00	.00	.00	Bhanumatsarkar	157939D
2	9	0	2.00	.00	.00	.00	Urimila devi	450048C
2	0	0	2.00	.00	.00	.00	Kathrik chandra	310916c
2	0	0	2.00	.00	1.00	.00	Sahara khatton	448448C
2	1	0	2.00	.00	.00	.00	Santhi	581334C
2	0	0	2.00	.00	.00	.00	Senji devi	597035C
2	1	0	2.00	.00	1.00	.00	Duky juhani	402365C
2	0	0	2.00	.00	.00	.00	Philomina rani	381434c
2	0	0	2.00	.00	.00	.00	Suderlalbanerjee	683798C
2	0	0	2.00	.00	.00	.00	Kanti Devi	269990C
2	0	0	2.00	.00	.00	.00	Sona Devi	604540C
2	0	0	2.00	.00	.00	.00	Manoj	592383C
1	9	0	2.00	.00	.00	.00	Cadaver	
1	2	0	.00	.00	.00	.00	Punithasinha	148882D
1	2	0	.00	.00	.00	.00	Rnizum	196586D
2	0	0	2.00	.00	.00	.00	Atabuddin	985224C
1	2	0	.00	.00	.00	1.00	Padanlan senitha	162931D
2	0	0	2.00	1.00	.00	.00	Pramila devi	477848C
0	9	0	2.00	.00	1.00	.00	Kusum devi	854916C
2	0	0	2.00	1.00	.00	1.00	Naine bala	336131C
0	0	0	.00	.00	.00	.00	NGathingi	448156D
2	1	0	2.00	.00	.00	.00	Goutam banerjee	
2	0	0	2.00	.00	.00	.00	cadaver	
2	1	0	2.00	.00	.00	.00	cadaver	
2	0	1	1.00	1.00	.00	.00	Lalriatchunga	851616c
2	0	0	2.00	.00	.00	.00	Md Nur alam	897802c
0	0	1	1.00	.00	.00	.00	Halal hussain	915718c
2	0	1	2.00	.00	.00	.00	Rita Gupta	616570C
0	1	1	1.00	.00	.00	.00	Rajeswari kumar	768607C
2	0	0	2.00	.00	.00	.00	Manoramma maghata	940941C
2	0	0	2.00	.00	.00	.00	Narbahadur	573310C
2	0	0	2.00	.00	.00	.00	padmini gurung	984504c
2	0	0	2.00	.00	.00	.00	cadaver	
2	0	0	2.00	.00	.00	.00	Mayabag	500088C
2	1	0	2.00	.00	.00	.00	Savithiri sorajni	296611c
2	0	0	2.00	1.00	.00	1.00	Tawa	983779C
2	0	0	2.00	.00	.00	.00	Munnipatwa	792559C
2	0	0	2.00	.00	.00	.00	Mutini bibi	819381C
2	0	0	2.00	.00	.00	.00	Tandin wangmo	304224C
2	9	0	2.00	.00	.00	.00	Maduri alpadhya	855170C
2	1	1	2.00	.00	.00	.00	madhav prasad	756757c
2	0	0	2.00	.00	.00	.00	Gour chandra samjdar	038693D
0	0	0	.00	.00	.00	.00	Esther	169418D
2	0	0	.00	.00	.00	.00	Samir Das	772053C
2	1	0	2.00	.00	.00	.00	Sofia begum	980698c
2	0	0	2.00	.00	.00	.00	cadaver	
2	0	0	2.00	1.00	.00	.00	Vikas barla	7999196C
2	0	0	2.00	.00	.00	.00	Nibedia choundry	380390C
2	9	0	2.00	.00	.00	1.00	Kiran kumar	985741C
2	0	0	2.00	.00	.00	.00	kanhayla devi	002615D
2	0	0	2.00	.00	.00	.00	Seema singh	470193c
2	1	0	2.00	.00	.00	.00	Lalmanuzuala	296655C
2	9	0	2.00	.00	.00	.00	Satyawati	960823C
2	0	0	2.00	.00	.00	.00	Rohim	619990C
2	0	0	2.00	.00	.00	.00	Neihkimi	019418d
0	1	0	2.00	.00	.00	.00	Cadaver	
2	0	0	2.00	.00	.00	.00	Mariamamma	471136C
2	0	0	2.00	.00	.00	.00	Jegan	488608c
2	0	0	2.00	.00	.00	.00	Babitha roy	452791c
2	0	0	2.00	.00	.00	.00	Wangdi	898870c
0	0	0	.00	1.00	1.00	.00	Mohan S.	345999D

2	0	0	2.00	.00	.00	.00	Susinadevi	460997C
2	0	0	2.00	.00	.00	.00	Pradhan	814469C
2	0	0	2.00	.00	.00	.00	Manjula devi	997885C
2	0	0	.00	.00	1.00	.00	Aliqula	111897D
2	0	0	.00	.00	.00	.00	Kajori Ullam	240726D
0	1	1	1.00	.00	.00	.00	Purushotham	466295C
0	0	0	.00	.00	1.00	.00	Tashi dema	126284D
2	1	0	2.00	.00	.00	.00	Md. Abdul latif	570496c
0	0	0	.00	.00	.00	.00	Monziree	140494D
2	9	0	2.00	.00	.00	.00	cadaver	
2	0	0	2.00	.00	.00	.00	Asraf Ali	409286c
0	0	0	.00	.00	.00	.00	Biswanath	307813D
2	0	0	2.00	.00	1.00	.00	Sandya gupta	922004C
2	0	0	2.00	.00	.00	.00	Dorji Lhadan	021963d
0	1	0	2.00	.00	.00	.00	Shamsul Alam	140282D
2	0	0	2.00	.00	.00	.00	Ramgopalkwat	308650c
2	0	1	2.00	.00	.00	.00	Anjaneyal reddy	651553C
2	9	0	2.00	.00	.00	.00	Ravi C	265666C
2	0	0	2.00	.00	.00	.00	Philomina rani	381434c
2	1	0	2.00	.00	.00	.00	Usha devi	414700C
2	0	0	2.00	.00	.00	.00	Regina choudhry	410832c
2	0	0	2.00	.00	.00	.00	Balaramana	328102B
2	0	0	2.00	.00	.00	.00	Bhaves ch jha	431377c
2	1	0	2.00	.00	.00	.00	Phuntsho	301191c
2	0	0	2.00	1.00	.00	.00	Sadhu singh	237113C
2	0	0	2.00	.00	.00	.00	Malti devi	394895c
2	0	0	2.00	.00	.00	.00	Nabomita	270028C
2	0	0	2.00	1.00	1.00	.00	Madhu saxena	592383C
2	9	0	2.00	1.00	.00	.00	abhilash	439954D
1	0	0	2.00	.00	.00	.00	cadaver	
2	1	0	2.00	.00	.00	.00	Cadaver	
2	1	0	2.00	.00	.00	.00	prasad	238548c
0	0	0	.00	.00	2.00	2.00	Namgay	440152D
2	0	0	2.00	.00	.00	.00	Papathi	450098c
2	0	0	2.00	.00	.00	.00	Md.Awland Hussain	273600C
2	0	0	2.00	.00	.00	.00	Philip	248997c
2	1	0	.00	.00	.00	.00	Rekha muhra	300304C
2	2	0	2.00	.00	.00	.00	Rosana	507516c
2	0	0	2.00	.00	.00	.00	Teshing nutun	577012C
2	0	0	2.00	.00	.00	.00	Chanchala rani	504467B
1	1	0	.00	1.00	.00	1.00	Ritan Pradhan	319560D
2	0	0	2.00	.00	1.00	.00	Durgabarla	134278C
2	0	0	2.00	1.00	.00	.00	Pushpajaha	164209C
2	0	0	2.00	1.00	.00	.00	cadaver	
2	0	0	2.00	.00	.00	.00	Prabita devi	351671c
2	0	0	2.00	.00	1.00	.00	Rajkumari devi	210131C
2	0	0	2.00	.00	.00	.00	Kekaghosh	438175c
2	0	0	2.00	.00	.00	.00	laltulangi	764390c
2	0	0	2.00	1.00	.00	.00	Asit Kumar Saha	667619C
0	0	0	2.00	.00	.00	.00	Lalthupui	338732d
2	9	0	2.00	.00	.00	.00	Rajendera redd	847650B
0	0	0	.00	.00	.00	.00	Snelathahalder	150465D
0	0	0	.00	.00	.00	.00	Gowripradhan	268977d
0	1	0	.00	.00	.00	.00	Daneil peterson	338472D
0	0	0	.00	.00	1.00	.00	SShanthi	466985D
0	1	0	.00	.00	.00	.00	Chitralkeha	470959D
2	0	0	2.00	.00	.00	.00	Md. Esthiaq biplop	678085C
0	0	0	2.00	.00	.00	.00	Malti devi	077950B
2	9	0	2.00	1.00	.00	.00	Sangeeta gope	308383C
2	0	0	2.00	.00	.00	.00	nandu	473704D
2	9	0	2.00	.00	.00	.00	Madhu saxena	578050C
2	0	0	2.00	.00	.00	1.00	Umadevi	297282c
2	0	0	2.00	.00	.00	.00	Janehta gomes	510606C
2	1	0	.00	.00	1.00	.00	Padma	988503B
0	1	0	.00	.00	.00	.00	Babin Jeba	272377D
0	0	0	.00	.00	.00	.00	Tharma dey	464167d
0	0	0	.00	.00	1.00	.00	Sejali Rani kuri	105057D
0	0	0	.00	.00	.00	.00	Shabnaerkhattoon	545379d
0	0	0	.00	.00	.00	.00	Varalakshmi	236275D
0	0	0	.00	.00	.00	.00	Sherab	414503D
0	0	0	.00	.00	.00	.00	moushimi	210564d

0	1	0	2.00	.00	.00	.00 Robert	913840c
0	9	0	.00	.00	.00	.00 Liankuanga	922025c
0	0	0	2.00	.00	.00	.00 Khau mahfeuzer rehman	427252c
2	0	0	2.00	.00	.00	.00 Lilly george	532435c

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9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	1.00	2.00	2.00	1.00	1.00	1.00	9.00	9.00	9.00

SALB5YR	SGPT5YR	SGOT5YR	SALB6YR	SGPT6YR	SGOT6YR	HBSAG	HBVPCR	HCVAB	HCVPCR	CMVPCR	PP65
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	1.00	1.00
9.00	9.00	9.00	9.00	9.00	9.00	0	2	0	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	0	2	0	2.00	1.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	0	2	0	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	0	0	1	1.00	1.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	0	2	.00	.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	0	0	2	.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	1	1	1	.00	1.00	1.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	1.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	1.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	1.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	.00	1.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	1.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	.00	1.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	1.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	2	2	2	2.00	3.00	3.00

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9.00	9.00	9.00	9.00	9.00	9.00	0	0	0	2.00	.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	1	0	9	.00	.00	.00
9.00	9.00	9.00	9.00	9.00	9.00	0	2	0	.00	1.00	3.00
9.00	9.00	9.00	9.00	9.00	9.00	0	0	0	.00	.00	3.00

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.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00
1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	1.00	1.00	.00	.00	1.00	.00	.00	.00	.00

MALIGANC	REJECTIO	TYPE	TREATMEN	RESPONSE	CREAT3	EGFR3	CREAT6	EGFR6	CREAT9	EFR9	CREAT1YR
.00	.00	.00	.00	.00	1.00	97.50	1.00	97.50	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.60	45.00	1.50	56.00	1.60	67.00	1.60
.00	.00	.00	.00	.00	1.20	70.00	1.30	65.00	1.20	88.00	1.40
.00	.00	.00	.00	.00	1.20	60.00	1.30	56.00	1.30	72.00	1.30
.00	.00	.00	.00	.00	1.00	62.50	1.50	55.30	9.00	9.00	1.20
.00	1.00	2.00	1.00	1.00	1.40	45.00	1.60	64.30	1.80	65.00	2.30
.00	.00	.00	.00	.00	1.00	78.00	1.00	89.00	.90	100.00	1.00
.00	1.00	2.00	1.00	1.00	.80	100.00	.90	111.00	.80	100.00	.80
.00	.00	.00	.00	.00	1.10	79.00	1.10	78.00	1.10	90.00	9.00
.00	.00	.00	.00	.00	1.00	85.50	1.10	76.60	9.00	9.00	9.00
.00	.00	.00	.00	.00	2.30	34.00	6.20	8.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	77.00	1.80	46.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.50	45.00	1.40	56.00	1.50	75.00	1.60
.00	.00	.00	.00	.00	1.40	55.00	1.40	56.00	1.80	62.00	1.70
.00	.00	.00	.00	.00	1.80	44.00	4.50	12.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.50	50.00	1.70	54.00	1.70	64.00	1.80
.00	.00	.00	.00	.00	.90	120.00	.90	101.00	.90	98.00	1.00
.00	.00	.00	.00	.00	1.20	78.00	1.20	80.00	1.40	76.00	9.00
.00	.00	.00	.00	.00	1.60	54.00	1.50	45.00	2.10	67.00	1.60
.00	.00	.00	.00	.00	.70	113.00	.70	100.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	66.00	1.20	66.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	80.00	1.00	76.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	78.00	1.00	86.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.20	55.00	2.30	45.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	65.00	1.10	69.00	1.20	88.00	1.20
.00	.00	.00	.00	.00	1.10	67.00	1.00	98.00	.90	90.00	1.00
.00	.00	.00	.00	.00	1.40	56.00	1.50	67.00	1.10	88.00	1.10
.00	.00	.00	.00	.00	1.90	35.00	2.00	45.00	2.30	67.00	2.20
.00	1.00	.00	1.00	1.00	1.10	66.00	1.00	78.00	1.00	88.00	1.10
.00	.00	.00	.00	.00	1.50	44.00	1.70	45.00	1.60	70.00	1.40
.00	1.00	2.00	1.00	1.00	1.30	54.00	2.10	34.00	1.40	75.00	9.00
.00	.00	.00	.00	.00	1.40	45.00	1.50	53.00	1.40	73.00	1.40
.00	1.00	2.00	1.00	1.00	1.90	33.00	1.80	41.00	1.70	65.00	1.90
.00	.00	.00	.00	.00	1.80	35.00	1.70	39.00	1.40	67.00	1.30
.00	.00	.00	.00	.00	.80	112.00	.90	90.00	.80	100.00	1.00
.00	.00	.00	.00	.00	1.10	76.00	1.00	98.00	1.00	98.00	1.10
.00	.00	.00	.00	.00	1.00	78.00	1.00	90.00	1.10	98.00	1.10
.00	.00	.00	.00	.00	1.10	70.00	1.20	78.00	1.20	88.00	1.20
.00	.00	.00	.00	.00	.90	89.00	.80	102.00	.80	112.00	9.00
.00	.00	.00	.00	.00	.80	90.00	.80	108.00	.80	100.00	.70
.00	.00	.00	.00	.00	1.40	45.00	1.40	76.00	1.40	76.00	9.00
.00	.00	.00	.00	.00	1.00	81.86	1.00	81.86	1.10	73.33	9.00
.00	.00	.00	.00	.00	1.70	48.80	1.70	48.80	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	85.30	1.00	85.30	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	66.75	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.60	48.00	1.70	45.00	1.70	45.00	9.00
.00	.00	.00	.00	.00	5.60	11.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.50	50.50	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	86.00	1.20	77.80	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	84.00	1.00	87.06	.90	99.30	9.00
.00	.00	.00	.00	.00	1.00	81.00	1.00	81.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	68.12	1.20	68.12	9.00	9.00	9.00
.00	1.00	2.00	2.00	1.00	.90	71.69	.90	71.60	1.00	63.40	1.00
.00	.00	.00	.00	.00	1.00	67.46	1.10	60.40	1.10	60.40	9.00
.00	.00	.00	.00	.00	1.10	78.20	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	.60	112.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	57.60	1.10	52.60	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	82.70	1.00	82.70	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	80.00	1.20	70.00	1.20	88.00	1.20
.00	1.00	2.00	1.00	1.00	1.90	45.00	2.00	45.00	1.80	65.00	1.90
.00	1.00	2.00	1.00	1.00	1.60	40.00	1.30	67.00	9.00	9.00	1.30
.00	.00	.00	.00	.00	.90	96.00	.90	96.00	9.00	9.00	.90
.00	.00	.00	.00	.00	1.40	64.36	1.20	43.26	1.20	63.26	9.00
.00	.00	.00	.00	.00	1.00	83.30	1.00	83.70	1.00	83.70	1.00
.00	.00	.00	.00	.00	.60	159.00	.60	159.00	.60	159.00	9.00
.00	.00	.00	.00	.00	1.60	50.00	1.70	45.00	1.70	45.00	9.00
.00	.00	.00	.00	.00	1.20	80.00	1.20	78.00	1.40	70.00	1.20
.00	.00	.00	.00	.00	1.10	85.00	1.00	87.00	1.10	78.00	9.00
.00	.00	.00	.00	.00	1.20	75.00	1.20	78.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	61.30	1.40	61.30	9.00	9.00	9.00

.00	.00	.00	.00	.00	.80	107.00	.90	93.46	9.00	9.00	.90
.00	.00	.00	.00	.00	1.20	70.00	.90	52.00	1.20	76.00	9.00
.00	.00	.00	.00	.00	1.20	59.17	1.20	59.17	9.00	9.00	1.10
.00	.00	.00	.00	.00	1.30	45.00	1.40	67.00	1.40	78.00	1.50
.00	.00	.00	.00	.00	1.50	36.00	1.60	78.00	1.70	75.00	1.80
.00	.00	.00	.00	.00	.90	98.00	1.10	87.00	1.00	98.00	1.10
.00	1.00	1.00	1.00	1.00	.80	113.00	.80	98.00	.80	65.00	.90
.00	.00	.00	.00	.00	.90	89.00	1.00	90.00	.90	98.00	9.00
.00	.00	.00	.00	.00	1.00	70.00	1.00	70.00	1.10	66.00	1.00
.00	1.00	2.00	1.00	1.00	1.20	66.00	1.30	78.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	77.00	.90	110.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	108.00	1.10	108.00	1.00	108.00	9.00
.00	.00	.00	.00	.00	1.00	70.00	1.10	62.80	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	51.00	1.40	67.00	1.40	74.00	1.40
.00	.00	.00	.00	.00	.90	78.00	.90	90.00	.80	94.00	.90
.00	.00	.00	.00	.00	1.30	44.00	1.90	53.00	1.90	56.00	1.70
.00	.00	.00	.00	.00	1.30	54.00	1.40	54.00	1.40	67.00	1.50
.00	.00	.00	.00	.00	1.00	77.00	1.00	89.00	1.10	87.00	1.10
.00	.00	.00	.00	.00	1.20	72.02	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.50	62.70	1.50	62.70	1.70	55.00	9.00
.00	.00	.00	.00	.00	.90	72.98	1.00	68.00	.90	72.90	.90
.00	.00	.00	.00	.00	1.50	44.00	1.50	56.00	1.50	67.00	1.60
.00	.00	.00	.00	.00	1.40	53.00	1.50	56.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	73.80	1.10	73.80	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	110.00	1.00	97.50	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	67.00	2.30	33.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.60	56.00	1.80	56.00	1.60	65.00	1.20
.00	.00	.00	.00	.00	1.10	78.00	1.10	87.00	1.20	70.00	9.00
.00	.00	.00	.00	.00	.90	89.00	.90	102.00	.90	98.00	.90
.00	.00	.00	.00	.00	1.00	93.25	1.00	93.25	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	90.00	.80	90.00	.80	111.00	.80
.00	.00	.00	.00	.00	1.30	56.00	1.60	45.00	1.50	68.00	1.40
.00	.00	.00	.00	.00	.90	108.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	45.00	1.50	65.00	1.50	64.00	1.60
.00	.00	.00	.00	.00	1.20	67.00	1.10	78.00	1.20	77.00	1.10
.00	.00	.00	.00	.00	1.20	77.38	1.30	70.38	1.30	73.00	1.20
.00	.00	.00	.00	.00	1.60	55.80	1.60	55.80	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	98.00	1.00	89.00	.90	103.00	1.00
.00	1.00	2.00	1.00	1.00	1.20	66.00	1.30	56.00	1.20	77.00	1.80
.00	.00	.00	.00	.00	.90	75.30	.90	75.30	.90	75.30	9.00
.00	.00	.00	.00	.00	1.10	83.54	1.20	75.56	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	83.22	.90	83.22	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	56.00	1.20	87.00	1.20	74.00	1.30
.00	.00	.00	.00	.00	2.10	34.00	2.40	56.00	2.60	56.00	2.00
.00	.00	.00	.00	.00	.70	108.00	.70	108.00	.80	92.00	9.00
.00	.00	.00	.00	.00	1.50	45.00	1.80	45.00	1.60	63.00	1.40
.00	.00	.00	.00	.00	1.40	43.00	1.60	67.00	9.00	9.00	1.50
.00	1.00	2.00	1.00	1.00	1.80	24.00	2.40	45.00	2.30	56.00	2.60
.00	.00	.00	.00	.00	1.60	34.00	1.80	45.00	1.80	55.00	1.60
.00	1.00	2.00	1.00	1.00	2.10	21.00	2.20	34.00	2.30	56.00	1.90
.00	.00	.00	.00	.00	1.90	23.00	1.90	45.00	1.90	60.00	2.00
.00	1.00	2.00	1.00	1.00	1.60	45.00	1.80	45.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	51.00	1.20	89.00	1.10	88.00	1.20
.00	.00	.00	.00	.00	1.60	43.00	1.80	59.00	1.60	68.00	1.30
.00	.00	.00	.00	.00	1.60	42.00	1.70	56.00	1.80	56.00	1.70
.00	.00	.00	.00	.00	1.20	52.00	1.20	87.00	1.30	67.00	1.50
.00	.00	.00	.00	.00	1.20	53.00	1.20	85.00	1.20	78.00	1.30
.00	.00	.00	.00	.00	2.00	34.00	1.90	45.00	2.00	66.00	2.10
.00	.00	.00	.00	.00	2.00	33.00	1.60	65.00	1.80	56.00	1.60
.00	.00	.00	.00	.00	1.30	44.00	1.30	76.00	1.40	70.00	1.20
.00	1.00	2.00	1.00	1.00	1.00	90.00	.90	98.00	1.10	88.00	2.00
.00	1.00	2.00	1.00	1.00	1.30	65.00	1.40	68.00	1.80	65.00	9.00
.00	.00	.00	.00	.00	.80	99.00	.90	98.00	.90	102.00	1.00
.00	.00	.00	.00	.00	1.00	89.00	1.00	89.00	.90	100.00	1.00
.00	.00	.00	.00	.00	1.10	78.00	1.10	89.00	1.00	90.00	1.10
.00	.00	.00	.00	.00	1.60	45.00	1.70	79.00	1.60	65.00	9.00
.00	.00	.00	.00	.00	1.50	54.00	2.00	70.00	3.20	45.00	3.50
.00	.00	.00	.00	.00	1.30	46.00	1.20	89.00	1.30	56.00	1.30
.00	.00	.00	.00	.00	1.60	47.00	1.40	58.00	2.30	45.00	1.70
.00	1.00	2.00	1.00	1.00	1.60	48.00	1.90	45.00	1.90	43.00	2.10
.00	.00	.00	.00	.00	1.40	56.00	1.40	67.00	1.30	65.00	1.20

.00	.00	.00	.00	.00	1.50	53.00	1.60	56.00	1.60	56.00	1.70
.00	1.00	1.00	2.00	1.00	1.00	89.00	1.00	89.00	2.10	54.00	2.00
.00	.00	.00	.00	.00	1.20	71.00	1.20	78.00	1.00	88.00	1.20
.00	.00	.00	.00	.00	1.20	70.23	1.30	70.00	1.20	70.23	9.00
.00	.00	.00	.00	.00	1.20	72.00	1.20	78.00	1.20	88.00	1.10
.00	1.00	2.00	1.00	1.00	1.70	43.00	1.50	67.00	1.50	65.00	9.00
.00	.00	.00	.00	.00	1.10	87.00	1.20	67.00	1.20	76.00	1.30
.00	.00	.00	.00	.00	1.30	42.00	1.20	67.00	.90	98.00	9.00
.00	1.00	2.00	1.00	1.00	1.80	24.00	2.10	56.00	2.80	68.00	3.30
.00	1.00	2.00	1.00	1.00	1.60	44.00	2.20	45.00	2.80	52.00	2.60
.00	1.00	2.00	1.00	1.00	1.40	55.00	1.90	48.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	98.00	1.10	80.00	1.00	88.00	1.00
.00	.00	.00	.00	.00	1.30	52.00	1.50	54.00	1.50	73.00	9.00
.00	.00	.00	.00	.00	1.00	89.00	1.10	85.00	1.00	88.00	1.20
.00	.00	.00	.00	.00	1.40	45.00	1.50	67.00	1.60	58.00	1.40
.00	.00	.00	.00	.00	1.30	55.00	1.30	56.00	1.30	72.00	1.50
.00	1.00	2.00	1.00	1.00	1.50	39.00	1.70	56.00	2.00	56.00	2.00
.00	.00	.00	.00	.00	1.20	67.00	1.30	78.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	68.00	1.30	67.00	1.40	68.00	9.00
.00	1.00	2.00	1.00	1.00	1.30	56.00	1.50	57.00	1.40	68.00	1.70
.00	.00	.00	.00	.00	1.10	79.00	1.90	45.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	99.00	1.50	56.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	45.00	1.10	90.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	.00	1.30	55.00	1.50	67.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	61.00	1.90	45.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.50	43.00	1.30	78.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	67.00	1.30	76.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.60	43.00	1.30	67.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.30	54.00	1.70	56.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.40	44.00	1.50	57.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	48.00	1.30	67.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	67.00	1.20	78.00	1.10	86.00	1.10
.00	.00	.00	.00	.00	1.10	78.00	.90	109.00	1.10	88.00	9.00
.00	1.00	2.00	1.00	1.00	1.90	23.00	1.90	45.00	1.90	52.00	1.90
.00	.00	.00	.00	.00	1.10	87.00	1.10	80.00	1.20	78.00	1.60
.00	1.00	1.00	1.00	1.00	1.50	52.00	1.50	67.00	1.70	54.00	1.60
.00	1.00	2.00	1.00	.00	2.00	22.00	1.30	67.00	1.40	74.00	1.50
.00	.00	.00	.00	1.00	1.00	90.10	1.00	90.10	1.00	90.00	1.10
.00	.00	.00	.00	.00	3.50	12.00	2.30	43.00	2.50	56.00	2.40
.00	.00	.00	.00	.00	2.20	23.00	1.80	54.00	1.40	68.00	1.50
.00	.00	.00	.00	.00	1.60	45.00	2.00	45.00	9.00	9.00	2.70
.00	.00	.00	.00	.00	1.50	48.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	65.00	1.50	67.00	1.20	78.00	1.20
.00	1.00	2.00	1.00	1.00	1.60	44.00	3.60	35.00	2.50	45.00	3.10
.00	1.00	2.00	.00	.00	1.80	48.00	1.80	48.00	2.00	42.50	9.00
.00	.00	.00	.00	.00	1.50	50.91	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	68.00	1.20	68.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.50	60.60	1.50	60.60	9.00	9.00	1.50
.00	1.00	2.00	1.00	1.00	1.00	89.00	1.10	68.00	1.20	88.00	1.10
.00	.00	.00	.00	.00	1.50	54.00	1.50	78.00	1.90	56.00	2.00
.00	.00	.00	.00	.00	1.20	65.00	1.30	68.00	1.50	67.00	2.10
.00	.00	.00	.00	.00	1.50	43.00	1.50	58.00	1.50	67.00	1.50
.00	1.00	2.00	1.00	1.00	2.00	42.00	2.30	54.00	2.40	53.00	4.20
.00	.00	.00	.00	.00	1.40	55.00	1.20	78.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	.00	1.80	34.00	1.80	65.00	1.70	56.00	1.60
.00	.00	.00	.00	.00	1.50	41.00	1.50	67.00	1.50	67.00	1.50
.00	1.00	1.00	1.00	.00	2.30	22.00	2.40	32.00	2.70	48.00	9.00
.00	1.00	2.00	1.00	1.00	1.50	43.00	2.10	34.00	2.40	54.00	2.30
.00	.00	.00	.00	.00	1.20	54.00	1.30	78.00	1.40	68.00	1.20
.00	.00	.00	.00	.00	1.20	54.00	1.30	67.00	1.40	65.00	1.30
.00	1.00	2.00	1.00	1.00	1.50	36.00	1.50	56.00	1.60	64.00	1.30
.00	.00	.00	.00	.00	2.50	32.00	3.50	23.00	2.40	54.00	9.00
.00	.00	.00	.00	.00	1.40	54.00	1.20	60.00	1.10	87.00	1.20
.00	.00	.00	.00	.00	2.80	21.00	2.60	43.00	2.50	56.00	2.50
.00	.00	.00	.00	.00	1.60	43.00	1.40	65.00	1.50	67.00	1.30
.00	.00	.00	.00	.00	1.20	78.00	1.40	65.00	1.30	76.00	1.20
.00	.00	.00	.00	.00	1.50	44.00	1.60	56.00	1.20	89.00	1.60
.00	.00	.00	.00	.00	1.40	48.00	1.30	68.00	1.50	67.00	1.20
.00	.00	.00	.00	.00	1.10	89.00	1.20	90.00	1.10	88.00	1.10
.00	.00	.00	.00	.00	1.20	65.00	1.20	80.00	9.00	9.00	1.30
.00	1.00	2.00	2.00	1.00	1.30	56.00	1.20	86.00	1.40	67.00	9.00

.00	.00	.00	.00	.00	.80	110.00	.90	100.00	.80	102.00	.80
.00	1.00	1.00	1.00	.00	2.30	22.00	2.40	45.00	2.70	56.00	9.00
.00	.00	.00	.00	.00	1.00	97.00	1.00	88.00	1.10	88.00	1.10
.00	1.00	2.00	.00	1.00	1.50	38.00	1.60	65.00	1.70	67.00	1.80
.00	1.00	2.00	1.00	1.00	1.00	88.00	1.10	78.00	1.00	78.00	1.00
.00	1.00	2.00	.00	.00	.90	94.00	1.10	78.00	1.00	88.00	1.10
.00	.00	.00	.00	.00	1.30	44.00	1.40	65.00	2.10	67.00	2.30
.00	1.00	2.00	1.00	1.00	1.70	32.00	2.10	56.00	2.00	56.00	1.50
.00	.00	.00	.00	.00	1.10	78.00	1.20	78.00	1.30	78.00	1.40
.00	1.00	2.00	1.00	.00	1.30	42.00	1.40	66.00	1.60	68.00	2.10
.00	.00	.00	.00	.00	1.80	29.00	2.20	54.00	2.30	56.00	2.10
.00	.00	.00	.00	.00	3.00	18.00	2.90	45.00	9.00	9.00	3.50
.00	1.00	2.00	1.00	.00	1.40	56.00	1.50	65.00	1.50	68.00	1.50
.00	.00	.00	.00	.00	1.60	45.00	1.70	63.00	1.40	78.00	1.60
.00	.00	.00	.00	.00	1.40	55.00	1.40	68.00	1.50	68.00	5.80
.00	1.00	2.00	1.00	.00	1.50	43.00	1.40	56.00	1.60	56.00	1.70
.00	1.00	2.00	1.00	.00	1.40	45.00	1.60	44.00	1.80	50.00	1.90
.00	.00	.00	.00	.00	1.70	33.00	1.60	43.00	1.50	67.00	1.60
.00	.00	.00	.00	.00	1.20	77.00	1.20	67.00	1.10	76.00	1.00
.00	.00	.00	.00	.00	1.10	81.94	1.20	74.11	9.00	9.00	1.20
.00	.00	.00	.00	.00	1.30	64.34	1.50	55.44	9.00	9.00	1.30
.00	.00	.00	.00	.00	1.00	78.00	.80	98.00	.90	90.00	.80
.00	1.00	2.00	1.00	1.00	1.90	31.00	1.80	45.00	1.60	56.00	1.60
.00	.00	.00	.00	.00	.80	98.00	.80	98.00	.90	100.00	.80
.00	.00	.00	.00	.00	.90	95.00	1.00	88.00	1.00	89.00	.90
.00	.00	.00	.00	.00	1.00	88.00	1.10	78.00	1.52	61.00	1.00
.00	.00	.00	.00	.00	.70	109.00	.80	99.00	.70	98.00	.70
.00	.00	.00	.00	.00	1.00	90.00	1.10	76.00	1.10	87.00	1.20
.00	.00	.00	.00	.00	.90	96.00	.90	88.00	.80	98.00	.90
.00	.00	.00	.00	.00	1.00	85.00	1.10	78.00	1.10	88.00	9.00
.00	1.00	2.00	1.00	1.00	1.60	43.00	1.50	56.00	1.70	56.00	1.70
.00	.00	.00	.00	.00	1.50	52.03	1.50	52.07	9.00	9.00	1.70
.00	.00	.00	.00	.00	1.40	65.63	1.40	65.63	1.70	52.46	9.00
.00	1.00	2.00	1.00	.00	1.40	56.00	1.50	56.00	1.30	73.00	9.00
.00	.00	.00	.00	.00	.90	92.12	1.00	81.50	9.00	9.00	1.00
.00	3.00	.00	.00	.00	1.10	74.00	1.20	73.00	1.20	73.00	9.00
.00	.00	.00	.00	.00	1.20	80.47	1.30	73.37	1.30	73.37	9.00
.00	.00	.00	.00	.00	1.50	61.69	9.00	9.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.30	70.92	1.40	65.11	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	73.00	1.20	73.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	102.20	1.00	90.00	1.00	90.00	1.10
.00	.00	.00	.00	.00	1.70	48.17	1.60	56.00	9.00	9.00	2.30
.00	.00	.00	.00	.00	1.60	54.50	1.60	54.50	9.00	9.00	1.70
.00	.00	.00	.00	.00	1.10	73.33	1.20	68.00	9.00	9.00	1.20
.00	.00	.00	.00	.00	.80	82.80	.80	82.80	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	87.00	1.20	78.00	1.20	78.00	1.20
.00	.00	.00	.00	.00	.90	70.44	.90	70.44	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.50	54.29	1.60	50.40	1.60	50.40	9.00
.00	.00	.00	.00	.00	1.00	81.16	1.10	73.33	1.20	66.33	9.00
.00	1.00	2.00	1.00	1.00	1.60	47.00	1.80	45.00	1.70	65.00	1.70
.00	1.00	2.00	1.00	1.00	1.80	35.00	1.80	45.00	1.70	56.00	1.70
.00	.00	.00	.00	.00	1.50	41.00	1.50	67.00	1.50	66.00	1.50
.00	.00	.00	.00	.00	1.50	42.00	1.50	67.00	1.60	65.00	1.60
.00	.00	.00	.00	.00	1.20	67.00	1.30	76.00	1.40	68.00	1.20
.00	.00	.00	.00	.00	1.00	78.00	1.00	82.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.60	51.14	1.60	51.14	9.00	9.00	1.80
.00	.00	.00	.00	.00	.80	97.17	.80	97.17	9.00	9.00	.80
.00	.00	.00	.00	.00	.90	87.00	.90	98.00	.90	98.00	98.00
.00	.00	.00	.00	.00	1.10	76.00	1.10	87.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	84.72	1.20	84.00	9.00	9.00	1.30
.00	1.00	2.00	1.00	1.00	1.80	37.00	1.70	54.00	1.50	68.00	1.60
.00	.00	.00	.00	.00	1.20	75.50	1.40	63.20	1.40	63.20	9.00
.00	1.00	2.00	1.00	1.00	1.60	45.00	1.50	56.00	1.60	56.00	1.60
.00	.00	.00	.00	.00	1.30	59.00	1.20	69.00	1.20	78.00	1.20
.00	1.00	2.00	.00	.00	1.10	79.00	1.00	89.00	1.00	88.00	1.10
.00	.00	.00	.00	.00	2.00	33.00	2.00	49.00	1.50	67.00	1.20
.00	.00	.00	.00	.00	.80	96.00	.80	98.00	.70	100.00	1.00
.00	.00	.00	.00	.00	1.20	69.00	1.30	59.00	1.20	78.00	1.10
.00	1.00	2.00	1.00	.00	1.10	7.00	1.00	78.00	1.20	76.00	5.00
.00	.00	.00	.00	.00	1.10	74.14	1.10	74.14	9.00	9.00	9.00
.00	.00	.00	.00	.00	.90	93.40	.90	63.40	.90	93.40	.90

.00	.00	.00	.00	.00	.90	110.50	.90	110.00	9.00	9.00	1.00
.00	.00	.00	.00	.00	.90	70.11	1.00	62.80	9.00	9.00	9.00
.00	.00	.00	.00	.00	.80	95.30	.80	95.30	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	50.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	56.12	1.20	50.00	9.00	9.00	1.00
.00	.00	.00	.00	.00	1.50	51.80	1.50	52.00	1.30	61.10	9.00
.00	.00	.00	.00	.00	1.20	65.00	1.00	75.00	1.20	78.00	1.10
.00	.00	.00	.00	.00	1.40	54.00	1.40	51.80	1.40	67.00	1.60
.00	.00	.00	.00	.00	1.70	34.00	1.80	34.00	1.90	54.00	2.00
.00	.00	.00	.00	.00	1.30	65.00	1.30	54.00	1.30	68.00	1.30
.00	.00	.00	.00	.00	1.50	36.00	1.50	34.00	1.70	58.00	1.90
.00	1.00	2.00	1.00	1.00	2.30	22.00	2.60	22.00	2.80	45.00	2.70
.00	1.00	2.00	1.00	1.00	1.20	56.00	1.30	56.00	1.20	68.00	1.20
.00	1.00	2.00	1.00	1.00	1.30	45.00	1.50	43.00	1.60	56.00	1.60
.00	.00	.00	.00	.00	1.40	38.00	1.30	56.00	1.30	75.00	1.30
.00	.00	.00	.00	.00	.80	96.00	.80	94.00	.80	98.00	9.00
.00	.00	.00	.00	.00	1.30	57.00	1.60	38.00	1.50	68.00	1.80
.00	.00	.00	.00	.00	1.70	32.00	1.70	34.00	1.30	76.00	1.60
.00	.00	.00	.00	.00	1.20	67.00	1.30	57.00	1.20	77.00	1.20
.00	.00	.00	.00	.00	1.40	56.00	1.40	32.00	1.40	68.00	1.40
.00	.00	.00	.00	.00	2.00	32.00	2.20	12.00	2.30	56.00	2.70
.00	1.00	2.00	1.00	1.00	1.50	33.00	1.80	23.00	2.00	58.00	2.30
.00	.00	.00	.00	.00	1.50	31.00	1.30	54.00	1.30	78.00	1.50
.00	1.00	2.00	1.00	1.00	1.20	58.00	1.30	54.00	1.40	77.00	1.30
.00	.00	.00	.00	.00	.90	90.00	.90	98.00	.90	90.00	1.00
.00	1.00	2.00	1.00	1.00	1.20	78.00	1.30	58.00	1.20	88.00	1.80
.00	.00	.00	.00	.00	.90	91.00	.90	90.00	.90	102.00	9.00
.00	.00	.00	.00	.00	1.10	74.00	1.30	64.00	1.30	86.00	1.20
.00	.00	.00	.00	.00	1.40	41.00	1.60	56.00	9.00	9.00	1.60
.00	1.00	2.00	1.00	1.00	2.10	23.00	2.20	45.00	2.00	56.00	1.60
.00	.00	.00	.00	.00	1.40	60.95	1.50	59.00	9.00	9.00	1.50
.00	.00	.00	.00	.00	1.10	87.00	1.20	7.00	1.40	9.00	9.00
.00	.00	.00	.00	.00	1.30	68.90	1.40	62.80	1.30	68.40	1.30
.00	.00	.00	.00	.00	1.00	86.00	1.00	86.00	1.00	86.00	9.00
.00	.00	.00	.00	.00	1.00	85.50	1.10	76.60	9.00	9.00	1.20
.00	.00	.00	.00	.00	1.00	98.20	9.00	9.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.20	69.28	1.30	63.70	1.30	63.00	1.30
.00	.00	.00	.00	.00	.80	82.00	.80	82.00	.80	82.00	.80
.00	.00	.00	.00	.00	1.60	56.00	1.90	45.00	1.80	64.00	1.80
.00	.00	.00	.00	.00	1.80	32.00	1.80	56.00	1.60	70.00	1.70
.00	.00	.00	.00	.00	1.00	87.00	1.00	88.00	1.10	88.00	1.10
.00	.00	.00	.00	.00	1.40	54.00	1.30	66.00	1.50	70.00	1.60
.00	.00	.00	.00	.00	1.20	75.56	1.30	68.80	9.00	9.00	1.30
.00	.00	.00	.00	.00	1.30	65.00	1.70	50.00	1.30	77.00	1.40
.00	1.00	2.00	1.00	1.00	2.30	41.00	2.00	44.00	2.80	56.00	3.20
.00	1.00	2.00	1.00	1.00	1.80	45.00	1.80	46.00	1.80	64.00	2.20
.00	1.00	2.00	1.00	1.00	1.80	43.00	2.90	33.00	2.80	56.00	2.70
.00	.00	.00	.00	.00	1.20	76.00	1.10	77.00	1.20	78.00	1.30
.00	.00	.00	.00	.00	.80	89.00	.80	98.00	.90	94.00	.80
.00	.00	.00	.00	.00	1.10	79.00	1.10	79.00	1.10	79.00	9.00
.00	.00	.00	.00	.00	1.10	75.00	1.00	83.70	1.00	87.30	9.00
.00	.00	.00	.00	.00	.90	70.40	.90	70.40	.90	70.40	.90
.00	.00	.00	.00	.00	.80	84.10	.90	73.00	.90	73.00	9.00
.00	.00	.00	.00	.00	1.60	51.00	1.70	45.00	2.60	60.00	2.50
.00	1.00	1.00	.00	1.00	1.50	53.00	1.40	68.00	1.50	68.00	1.40
.00	1.00	2.00	1.00	1.00	1.40	45.00	1.60	56.00	3.20	34.00	2.60
.00	.00	.00	.00	.00	1.30	65.00	1.40	67.00	1.30	67.00	1.40
.00	.00	.00	.00	.00	1.20	72.41	1.30	66.02	9.00	9.00	1.20
.00	.00	.00	.00	.00	.70	99.00	.70	99.00	.80	98.00	.80
.00	.00	.00	.00	.00	1.10	85.00	1.20	78.00	1.20	9.00	9.00
.00	.00	.00	.00	.00	1.00	89.00	1.00	88.00	1.20	9.00	9.00
.00	1.00	1.00	1.00	1.00	1.70	33.00	1.60	56.00	1.50	67.00	1.50
.00	.00	.00	.00	.00	1.10	87.40	1.10	87.40	1.20	79.20	9.00
.00	.00	.00	.00	.00	.90	105.00	1.00	93.50	9.00	9.00	1.10
.00	.00	.00	.00	.00	1.00	98.42	1.10	88.70	9.00	9.00	1.10
.00	.00	.00	.00	.00	1.30	58.00	1.30	77.00	1.40	65.00	1.20
.00	.00	.00	.00	.00	1.30	59.00	1.30	68.00	1.50	72.00	1.50
.00	.00	.00	.00	.00	1.50	55.80	1.40	59.46	1.60	51.40	1.60
.00	1.00	2.00	1.00	1.00	1.50	51.00	1.50	56.00	1.40	74.00	9.00
.00	.00	.00	.00	.00	1.00	84.07	1.00	57.07	1.10	75.00	9.00
.00	.00	.00	.00	.00	.90	90.78	.80	90.78	9.00	9.00	.80

.00	.00	.00	.00	.00	.90	70.40	.90	70.40	9.00	9.00	1.00
.00	.00	.00	.00	.00	1.20	76.00	1.30	72.00	9.00	9.00	1.30
.00	.00	.00	.00	.00	1.40	61.00	1.50	56.00	1.50	68.00	9.00
.00	.00	.00	.00	.00	1.10	87.40	1.10	87.40	1.00	97.00	1.10
.00	1.00	2.00	1.00	1.00	1.00	98.42	1.60	57.22	9.00	9.00	2.40
.00	.00	.00	.00	.00	1.10	74.00	1.00	97.00	1.10	9.00	1.70
.00	.00	.00	.00	.00	1.10	76.00	1.10	87.00	1.20	78.00	1.50
.00	.00	.00	.00	.00	.70	98.00	.90	98.00	.90	98.00	.90
.00	.00	.00	.00	.00	1.30	67.00	1.40	78.00	1.50	67.00	1.60
.00	1.00	2.00	1.00	1.00	1.90	32.00	2.30	45.00	2.30	56.00	2.80
.00	.00	.00	.00	.00	1.10	83.54	1.20	75.50	9.00	9.00	1.20
.00	.00	.00	.00	.00	1.60	56.00	1.30	65.00	1.30	68.00	1.20
.00	1.00	2.00	1.00	1.00	1.40	64.00	1.10	77.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	76.00	1.60	55.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	77.00	1.00	89.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	75.00	1.10	78.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	76.00	.90	94.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.70	43.00	1.40	65.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	61.00	2.30	45.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	75.00	1.20	67.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	65.00	1.30	56.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	69.00	1.20	59.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.00	73.00	1.10	69.00	1.10	88.00	1.00
.00	.00	.00	.00	.00	1.00	86.80	1.10	77.60	9.00	9.00	1.10
.00	.00	.00	.00	.00	1.30	47.98	1.20	52.60	9.00	9.00	1.40
.00	.00	.00	.00	.00	1.10	67.00	1.10	77.00	1.10	88.00	9.00
.00	.00	.00	.00	.00	1.10	75.62	1.20	68.40	9.00	9.00	1.10
.00	.00	.00	.00	.00	.90	89.00	1.00	89.00	.90	98.00	.90
.00	.00	.00	.00	.00	1.40	45.00	1.50	65.00	1.40	67.00	1.40
.00	.00	.00	.00	.00	1.10	76.00	1.00	88.00	1.20	78.00	1.20
.00	.00	.00	.00	.00	1.40	58.25	1.40	67.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	78.00	1.10	77.00	1.10	76.00	1.10
.00	.00	.00	.00	.00	1.20	65.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	69.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	89.00	1.00	86.00	1.00	89.00	.80
.00	.00	.00	.00	.00	.90	98.00	1.10	87.00	1.00	88.00	.80
.00	.00	.00	.00	.00	1.30	78.00	1.30	76.00	1.40	65.00	1.30
.00	.00	.00	.00	.00	1.10	86.69	1.10	87.00	9.00	9.00	1.20
.00	.00	.00	.00	.00	1.80	51.00	1.90	50.00	2.00	50.00	2.30
.00	1.00	2.00	1.00	1.00	1.50	56.00	1.40	56.00	9.00	9.00	1.30
.00	1.00	2.00	1.00	1.00	1.50	54.00	1.40	56.00	1.50	70.00	1.90
.00	.00	.00	.00	.00	.90	98.00	.90	98.00	.90	99.00	9.00
.00	.00	.00	.00	.00	1.90	32.00	1.70	56.00	1.50	65.00	1.60
.00	.00	.00	.00	.00	1.40	65.00	1.50	66.00	1.60	65.00	1.50
.00	.00	.00	.00	.00	1.30	67.00	1.40	67.00	1.90	67.00	1.60
.00	.00	.00	.00	.00	1.40	56.00	1.80	54.00	1.90	67.00	1.70
.00	.00	.00	.00	.00	.80	87.00	.90	96.00	1.00	98.00	1.00
.00	.00	.00	.00	.00	1.30	56.00	1.20	87.00	1.30	76.00	1.50
.00	1.00	2.00	1.00	1.00	1.00	88.00	.90	102.00	1.00	88.00	1.00
.00	.00	.00	.00	.00	1.00	76.00	1.00	98.00	.90	98.00	1.32
.00	.00	.00	.00	.00	1.20	74.00	9.00	9.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	.00	1.40	67.00	1.50	56.00	1.30	68.00	9.00
.00	.00	.00	.00	.00	1.30	60.90	1.40	55.70	1.40	55.70	9.00
.00	.00	.00	.00	.00	1.10	75.00	1.10	78.00	1.10	78.00	1.10
.00	.00	.00	.00	.00	1.70	34.00	1.80	56.00	9.00	9.00	1.50
.00	.00	.00	.00	.00	1.10	78.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	.80	90.00	.90	90.00	.80	100.00	.80
.00	.00	.00	.00	.00	1.30	67.00	1.20	68.00	1.20	80.00	1.10
.00	.00	.00	.00	.00	.70	99.00	.70	99.00	9.00	9.00	.90
.00	.00	.00	.00	.00	1.00	87.00	1.10	83.00	1.10	83.00	1.10
.00	.00	.00	.00	.00	.80	98.00	.70	100.00	.80	100.00	.90
.00	.00	.00	.00	.00	2.10	45.00	2.70	43.00	2.90	40.00	1.80
.00	1.00	2.00	1.00	1.00	1.20	76.00	1.10	78.00	1.20	78.00	1.40
.00	1.00	2.00	1.00	1.00	1.00	87.00	1.00	87.00	1.20	87.00	1.20
.00	.00	.00	.00	.00	1.30	61.00	1.40	57.00	1.30	60.00	9.00
.00	1.00	2.00	1.00	1.00	1.30	56.00	1.60	43.00	1.30	43.00	1.40
.00	.00	.00	.00	.00	1.70	43.00	1.60	45.00	1.70	45.00	1.60
.00	1.00	2.00	1.00	.00	.90	98.00	1.00	88.00	.90	88.00	1.00
.00	.00	.00	.00	.00	.90	96.00	1.10	87.00	1.00	88.00	1.10
.00	.00	.00	.00	.00	1.00	76.00	9.00	9.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	75.00	1.20	67.80	1.20	67.80	9.00

.00	.00	.00	.00	.00	2.10	34.00	2.90	23.00	2.80	22.00	2.70
.00	.00	.00	.00	.00	1.80	43.00	1.70	45.00	1.50	50.00	1.60
.00	1.00	1.00	2.00	1.00	1.60	54.00	1.70	45.00	1.60	45.00	1.70
.00	.00	.00	.00	.00	.80	97.00	.80	95.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	105.00	1.10	94.50	1.10	85.00	9.00
.00	.00	.00	.00	.00	1.50	56.00	1.50	56.00	1.70	56.00	1.50
.00	.00	.00	.00	.00	.80	87.00	.80	98.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.30	65.00	1.40	68.00	1.30	68.00	1.20
.00	.00	.00	.00	.00	1.10	76.00	1.00	90.00	9.00	9.00	9.00
.00	1.00	1.00	1.00	1.00	1.30	56.00	1.40	68.00	1.30	66.00	1.50
.00	1.00	2.00	1.00	.00	1.00	78.00	.80	89.00	.90	96.00	1.00
.00	.00	.00	.00	.00	.80	81.00	.80	81.00	.80	81.00	9.00
.00	.00	.00	.00	.00	1.00	77.00	.90	96.00	.90	87.00	.80
.00	.00	.00	.00	.00	.80	98.00	.90	96.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	63.00	1.20	78.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.40	54.00	1.30	78.00	1.90	56.00	2.60
.00	.00	.00	.00	.00	1.00	76.00	1.00	93.00	1.00	98.00	1.00
.00	.00	.00	.00	.00	1.60	51.00	1.50	56.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	65.00	1.30	56.00	1.20	88.00	1.20
.00	.00	.00	.00	.00	1.30	54.00	1.20	78.00	1.40	78.00	9.00
.00	.00	.00	.00	.00	1.70	51.00	2.00	45.00	1.90	43.00	9.00
.00	.00	.00	.00	.00	1.40	43.00	1.70	56.00	1.80	45.00	1.40
.00	.00	.00	.00	.00	1.30	65.00	1.80	45.00	2.60	43.00	1.80
.00	.00	.00	.00	.00	1.30	66.00	1.40	67.00	1.30	68.00	9.00
.00	1.00	2.00	1.00	1.00	1.30	65.00	1.90	48.00	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.40	56.00	1.40	68.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.30	65.00	1.10	87.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	76.00	1.70	56.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.00	78.00	1.70	56.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	65.00	1.50	67.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.20	78.00	1.10	87.00	1.10	76.00	1.10
.00	.00	.00	.00	.00	1.00	83.00	1.00	88.00	1.00	78.00	9.00
.00	.00	.00	.00	.00	2.00	43.00	1.90	46.14	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.40	56.00	1.80	56.00	1.60	56.00	1.60
.00	.00	.00	.00	.00	1.60	56.00	1.50	73.00	1.50	58.00	1.70
.00	.00	.00	.00	.00	1.30	66.00	1.40	71.00	1.40	59.00	1.50
.00	.00	.00	.00	.00	1.10	78.00	1.20	76.00	1.10	78.00	1.10
.00	.00	.00	.00	.00	1.10	65.00	1.20	58.66	9.00	9.00	1.20
.00	.00	.00	.00	.00	1.30	61.00	1.10	83.00	1.30	65.00	1.30
.00	1.00	2.00	1.00	1.00	1.70	51.00	1.80	65.00	1.90	38.00	1.60
.00	.00	.00	.00	.00	1.10	73.00	1.20	66.00	1.10	73.00	1.10
.00	.00	.00	.00	.00	1.30	67.50	1.50	57.29	9.00	9.00	1.50
.00	.00	.00	.00	.00	1.20	68.12	1.20	68.12	9.00	9.00	1.10
.00	.00	.00	.00	.00	1.30	67.00	1.30	69.00	1.40	68.00	1.70
.00	.00	.00	.00	.00	1.30	68.00	1.50	63.00	1.40	66.00	1.50
.00	.00	.00	.00	.00	1.80	55.00	1.70	56.00	1.40	68.00	1.70
.00	1.00	2.00	1.00	1.00	1.20	81.00	1.30	65.00	1.50	66.00	1.60
.00	.00	.00	.00	.00	1.50	59.00	9.00	9.00	9.00	9.00	9.00
.00	.00	2.00	.00	.00	1.40	68.00	1.30	66.00	1.30	67.00	1.40
.00	.00	.00	.00	.00	.90	105.00	.90	105.00	9.00	9.00	.90
.00	.00	.00	.00	.00	1.40	73.00	1.50	76.00	1.40	66.00	1.20
.00	.00	.00	.00	.00	1.30	93.19	1.40	83.42	9.00	9.00	1.50
.00	.00	.00	.00	.00	1.00	101.50	1.00	101.00	1.00	101.00	1.00
.00	.00	.00	.00	.00	1.00	76.43	1.00	76.00	1.10	68.47	1.00
.00	.00	.00	.00	.00	1.20	56.60	1.30	51.20	1.30	51.20	9.00
.00	.00	.00	.00	.00	1.20	73.20	1.20	73.20	9.00	9.00	9.00
.00	1.00	2.00	1.00	1.00	1.00	90.00	1.10	75.00	2.00	44.00	9.00
.00	.00	.00	.00	.00	1.80	56.00	1.90	51.00	1.80	44.00	1.70
.00	.00	.00	.00	.00	1.60	59.00	1.70	55.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	80.00	1.30	69.00	9.00	9.00	9.00
.00	1.00	1.00	2.00	1.00	1.40	61.00	1.50	67.00	1.60	68.00	1.60
.00	.00	.00	.00	.00	.90	86.00	1.00	85.00	.90	87.00	.80
.00	.00	.00	.00	.00	1.30	71.00	1.40	67.00	1.50	56.00	1.40
.00	.00	.00	.00	.00	1.70	49.28	1.70	49.00	9.00	9.00	1.90
.00	.00	.00	.00	.00	1.50	59.00	1.40	64.00	1.40	64.00	9.00
.00	.00	.00	.00	.00	.80	116.00	.80	116.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.10	78.41	1.10	78.41	9.00	9.00	9.00
.00	.00	.00	.00	.00	1.60	51.40	1.90	45.00	9.00	9.00	9.00
.00	.00	.00	.00	.00	.80	83.21	1.00	64.32	.80	83.00	1.00
.00	.00	.00	.00	.00	.90	74.80	.80	85.70	.80	85.70	9.00
.00	.00	.00	.00	.00	.90	77.12	1.00	68.29	9.00	9.00	1.00

.00	.00	.00	.00	.00	.90	84.00	.90	91.00	1.00	93.00	.80
.00	.00	.00	.00	.00	1.10	85.00	1.20	76.00	1.20	67.00	1.30
.00	1.00	2.00	1.00	1.00	1.80	51.00	2.50	45.00	2.60	45.00	2.50
.00	.00	.00	.00	.00	1.20	81.00	1.30	72.00	1.80	45.00	1.70

[illegible]

93.46	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
65.70	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
70.00	3.90	54.00	4.10	43.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
70.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
90.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
94.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
70.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
74.00	1.40	74.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
90.00	.90	90.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
65.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
60.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
87.00	1.10	87.00	1.30	77.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
72.90	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
55.00	1.30	70.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
78.00	1.40	68.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
98.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
111.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
75.00	1.90	9.00	9.00	9.00	1.50	9.00	9.00	9.00	9.00	9.00	9.00
9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
56.00	1.60	56.00	2.10	49.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
84.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
85.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
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